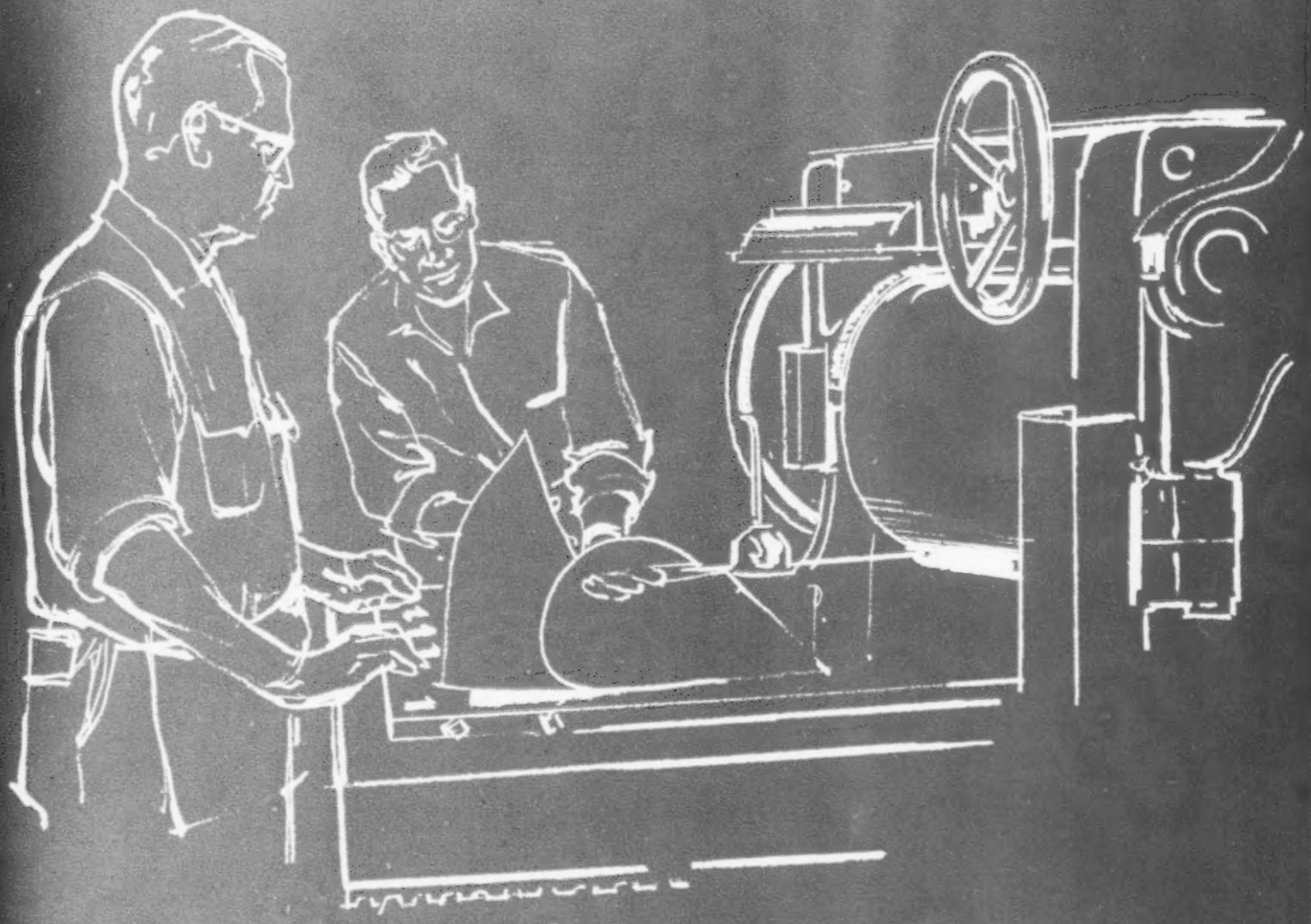
PRINTING PRODUCTION

JANUARY
1960



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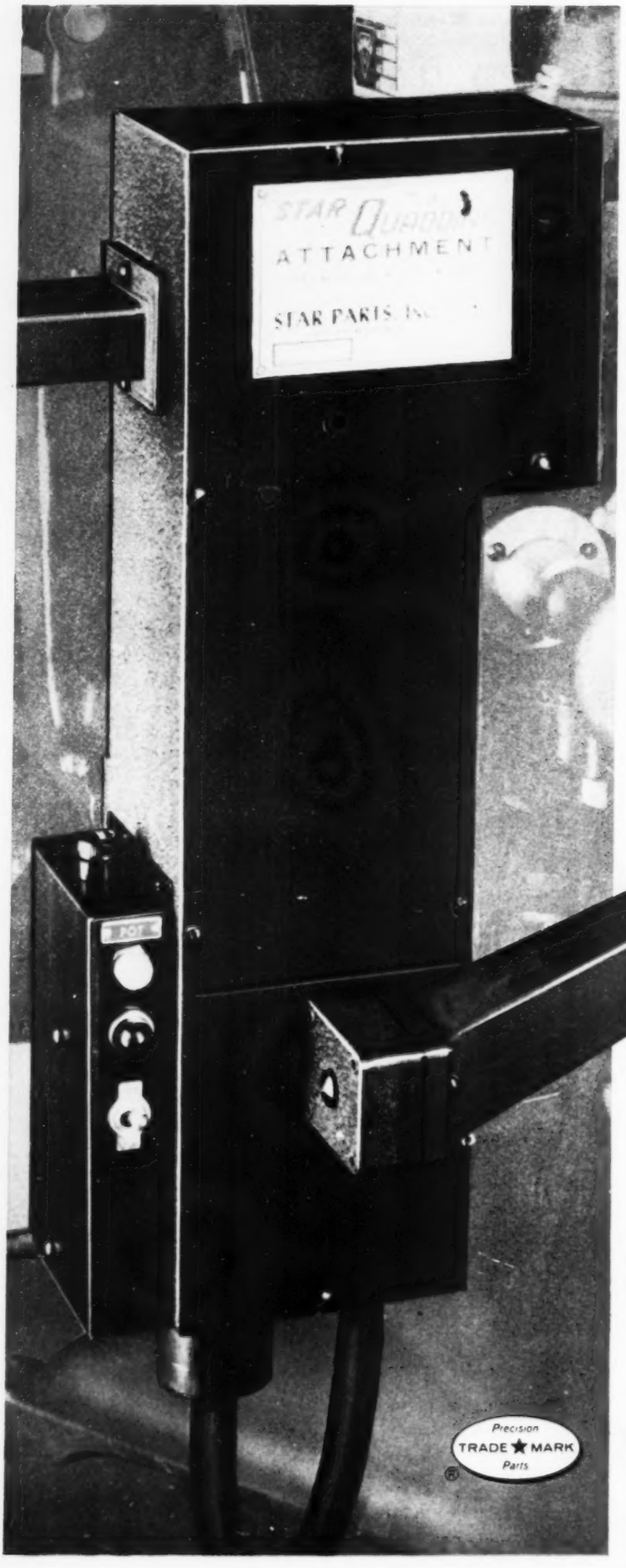
LOOKING FOR LITHO PLANT HAZARDS

ROTARY LETTERPRESS PRE-PRESS TECHNIQUES

GLOBAL GRAPHIC ARTS RESEARCH

ANNUAL INDEX OF EDITORIAL ARTICLES

THE PRODUCTION MAGAZINE FOR PRINTERS AND LITHOGRAPHERS



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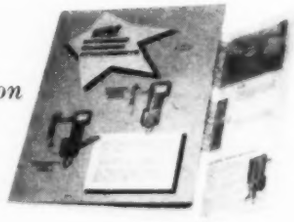

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For More Information Circle 167 on Reader Service Card

for packless mats . . . and standard mats

This New, Improved Model Master Former is Sta-Hi's answer to the newspaper industry's need for a machine to properly process "packless mats" of all makes, to also improve the drying and forming of hand-packed mats, and to be used interchangeably between the two types of mats.

Here are some of the many field-tested advancements in this improved machine:

HEAT-SAVER LATCH on Vacuum Chamber — providing more constant control of heat in the machine and more even heat diffusion . . . HEAT DISTRIBUTION PLATES —of perforated aluminum, in both Base Heater and Chamber Heater, giving more uniform flow of heat over entire surface of mats . . . NEW ELECTRIC RELAY SYSTEM—making for more accurate thermostatic heat control and longer thermostat life. . NEW DESIGN FOLLOW BARS — recessed, for improved "sealing" and "following" of mats during shrinkage . . . FINE SCREEN VACUUM PLATE—for better vacuum-forming of either packless or standard mats . . . IMPROVED AIR FILTER — minimizing accumulation of foreign matter in vacuum system to assure maximum efficiency . . . NEW TYPE PRECISION TIMERS — long range (up to 20 minutes), easily observed through open "ports" in new front panel and quickly adjustable to meet requirements . . . NEW EXHAUST MANIFOLD — simplifying the "venting" of exhaust discharge from the stereotype room . . .

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1. Thinner base—.0045.
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SUPERIOR

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inserting-stitching-trimming in one operation decreases cost/thousand...

and BECAUSE...
Sheridan automatic saddle-binding equipment offers maximum hourly yield...

we invite Production Executives
to compare equipment claims and performance...and recognize Sheridan Superiority

SUSTAINED PRODUCTION—Sheridan inserter, gang stitcher and multi-knife trimmer units are designed and quality built to minimize non-productive downtime . . . a *bonus* value for increased production.

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UNDIVIDED RESPONSIBILITY— every unit is built by Sheridan . . . sold by Sheridan . . . serviced by Sheridan.

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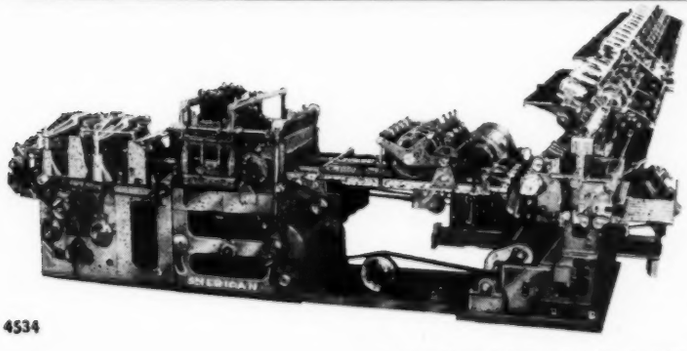

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. . . what does it mean?

WEBSTER DEFINES "QUALITY" AS:
A distinguishing element or characteristic . . . a degree of goodness . . . excellence . . . grade . . .

Many people have tried to improve on these words by describing their products as "best, top, superior, finest, unmatched, etc., etc.," claims without end, often without reason.

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WOOD has always adhered to a fixed objective: to manufacture the finest newspaper machinery possible. *Quality* has always been the underlying principle and we present our definition of this word with the statement that *NO ONE* has ever built a better product.

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PLAINFIELD, N. J.

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For More Information Circle 237 on Reader Service Card

JANUARY 1960
VOL. 90, NO. 4

PRINTING PRODUCTION

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THE COVER illustration of this issue depicts a stereotype mat molding operation using one of the new packless mat materials now available. A special report to the newspaper industry of the effectiveness of packless mats may be found on page 33 which was compiled from a survey of users of this material. It is important because it shows that one of the major bottlenecks in newspaper production has been broken by the introduction of packless mats in stereotyping operations. The cover scene is sketched from a Minneapolis *Star* and *Tribune* photo showing stereotyper Kenneth Lund and Don J. Little, stereo superintendent, before a mat molding machine.

LETTERS
TO THE EDITORS

Saved A Patent Search

We want you to know that through reading the information contained in the Printing Industry Patents section published regularly in your magazine we have saved a great deal of time and money in our business.

Our patent attorney has advised that if a search had been required for the two patents discovered in your publication it would have cost at least $500.

Needless to say we are very grateful for this. At this time we would also like to thank you for the way you have kept us informed over the years. The writing in PRINTING PRODUCTION is the most concise and understandable of any technical publication we have ever read.

Roy Rothstein, President
Type and Art, Inc.
Cleveland, Ohio

Applauds Timely Series

Warren L. Rhodes of Rochester Institute of Technology has brought to my attention the articles on Graphic Arts research by Dr. Marvin Rogers which have appeared in your recent issues (September 1959 through current issue).

We read these articles with great interest and agree with Dr. Rogers. It is quite probable that major research into basic improvement in printing technology as done by printers would have to be done on an industry basis. There are few individual printers with sufficient funds to spend the money required on their own initiative.

We cannot help but feel that these articles at this time are both timely and important.

T. J. Craig
Assistant General Manager
Graphic Arts Group
Sun Chemical Corp.
New York, N. Y.

History of Research Parallels Current Efforts

I intended writing you earlier to compliment you on the articles by Marvin C. Rogers. However, retirement has kept me busy doing nothing in particular, and enjoying that thoroughly.

Warren L. Rhodes' comments on the article in the November issue plus Marvin's excellent series in the September through November issues rang a bell in my memory. Hence this letter, which covers some ancient history.

When I was technical director of the Government Printing Office in the late '20s and early '30s, the U. S. Public Printer, George H. Carter, suggested that I keep a scrap book as the contents might prove interesting in later years. So, I got the old book out and dug into it.

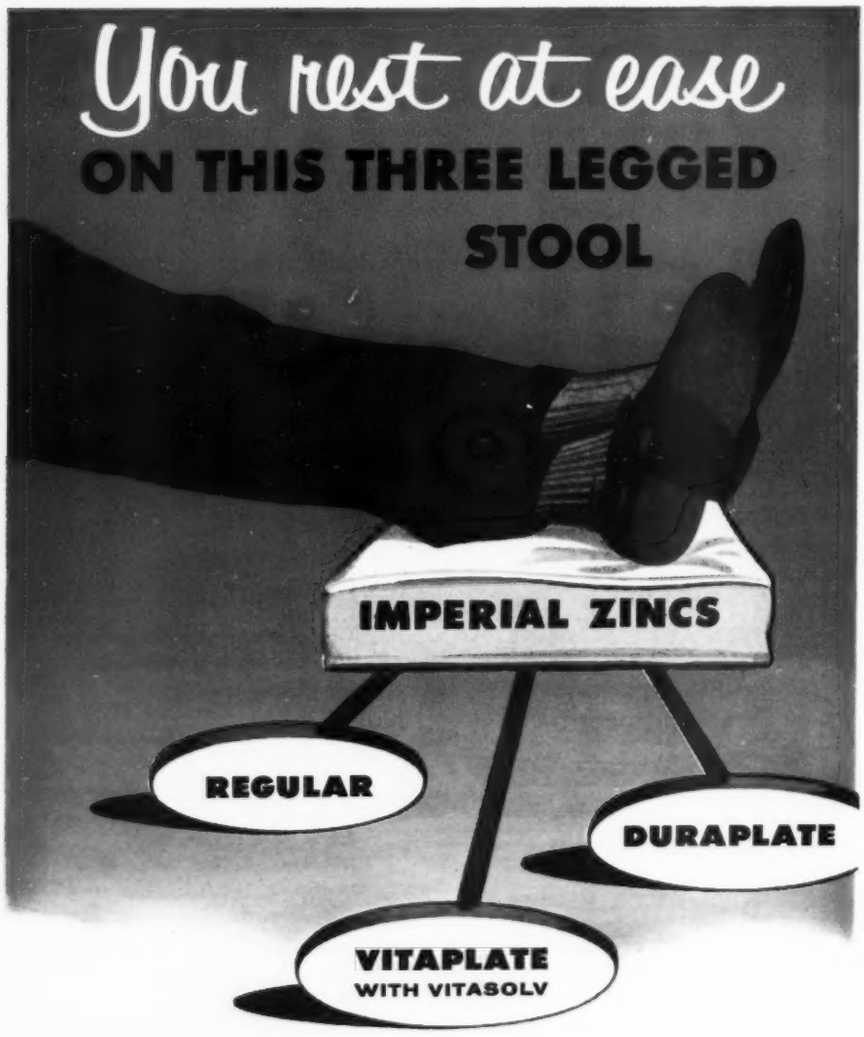
The suggestions of both Rogers and Rhodes parallel to a marked degree efforts made in 1929, thirty years ago. The Printing Industry Div. of the American Society of Mechanical Engineers had a grand program of international research in printing. It called a number of experts from several countries to a conference held at Carnegie Tech in Pittsburgh on Nov. 7-8, 1929.

The ASME *News* of Nov. 22 and the Pittsburgh *Press* of Nov. 7 each carried pictures and stories describing the conference. Among the leaders present were: U. S. Public Printer Carter, a fervent advocate of research; Franz Helmberger, official printer of the German Government; John Munro, supervisor of printing of the Canadian Government Printing Office, and Prof. J. R. Riddell, principal of the London School of Printing. Prof. Riddell was the father of Dr. George Riddell, who for many years was technical director of PATRA.

There were some 330 registrants, between 35 and 40 of whom were from printing plants in this country, with a few from Canada. In checking over the list, I noticed that at least three of the largest printers were not represented.

Incidentally, Dr. Rogers mentioned in one of his articles that Joseph Chanko of Conde' Nast Press had tried to develop interest in a research program in the 1940s. Actually, his interest goes even farther back as we had talks with him at the GPO some time prior to that. He was among those present at the Pittsburgh meeting and took an active part.

According to the published reports the



No matter what your requirements, rest assured that Imperial's three zincs are best to meet all or any of your needs for conventional or powderless etching.

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Imperial's Quality and Services are beyond duplication
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"Some Reasons Why Printers Prefer Ludlow"

This is the title of the big, new 32-page booklet that we have just completed since the recent Graphic Arts Exposition in New York. It outlines some outstanding Ludlow advantages and operating economies which you should know about.

This big booklet graphically illustrates and describes the way in which the Ludlow helps to solve such printing plant problems as type shortages, type breakage, scarcity of spacing material, excessive press make-ready, press work-ups, congested floor space, multiple forms, and ruleform composition—to mention a few important ones.

As you go through this booklet you will realize some of the reasons why so many progressive printing and publishing firms, specialty printers and others have discarded the old, time-honored typesetting methods and have changed to the improved Ludlow system of all-slug composition.

Send for your free copy of this big 32-page booklet—it will give you a better understanding of Ludlow's contribution to efficient composing room production. It is real information for you.

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meeting was quite enthusiastic although no definite program was developed. That may be one of the reasons why, at the final session where ways and means were to be discussed, there was a very slight attendance. Possibly the stock market crash the month before had some bearing on it. After all the fanfare, nothing constructive resulted from the conference.

Some isolated research was under way at that time, and as mentioned by Dr. Rogers, there is more of the same now. There is still no integrated program, however, covering the whole industry. Such a program is essential if real progress is to be made.

Such work would eventually be on a rather large scale, preferably separated for any educational institution. Lithographic Technical Foundation has demonstrated this. As long as their work was tied in with a college it served merely as a training school, but when they went on their own, concrete results began to be more in evidence. The British research agency, PATRA, has always been on an independent basis.

Although all this is ancient history, it still may be of interest. As for me, I sit on the side lines in the land of sunshine, "where there ain't no snow, and the ice comes in cubes."

Byron L. Wehmhoff
Maitland, Florida

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NEWS ITEMS

St. Louis Printing Firm Sold—The sale of Woodward-Tiernan Printing Co., St. Louis, to Simmons-Sisler Co., also of St. Louis, has been announced. Woodward-Tiernan will become a subsidiary of Simmons-Sisler, which also owns Forest Park Products Co., an advertising merchandising concern. Also, it has been announced that Universal Match Corp. has a contract with Simmons-Sisler to acquire that company and its wholly owned subsidiaries in the near future.

Friend Joins Boston Firm—Sumner Williams, Inc., Boston, has announced the appointment of Merrill N. Friend to the newly created position of technical manager. Formerly, Friend was research and development manager for Spaulding-Moss Co., and he has served as president of the Boston Litho Club. In his new post, Friend will supervise engineering, process development, and quality control.

FRIEND

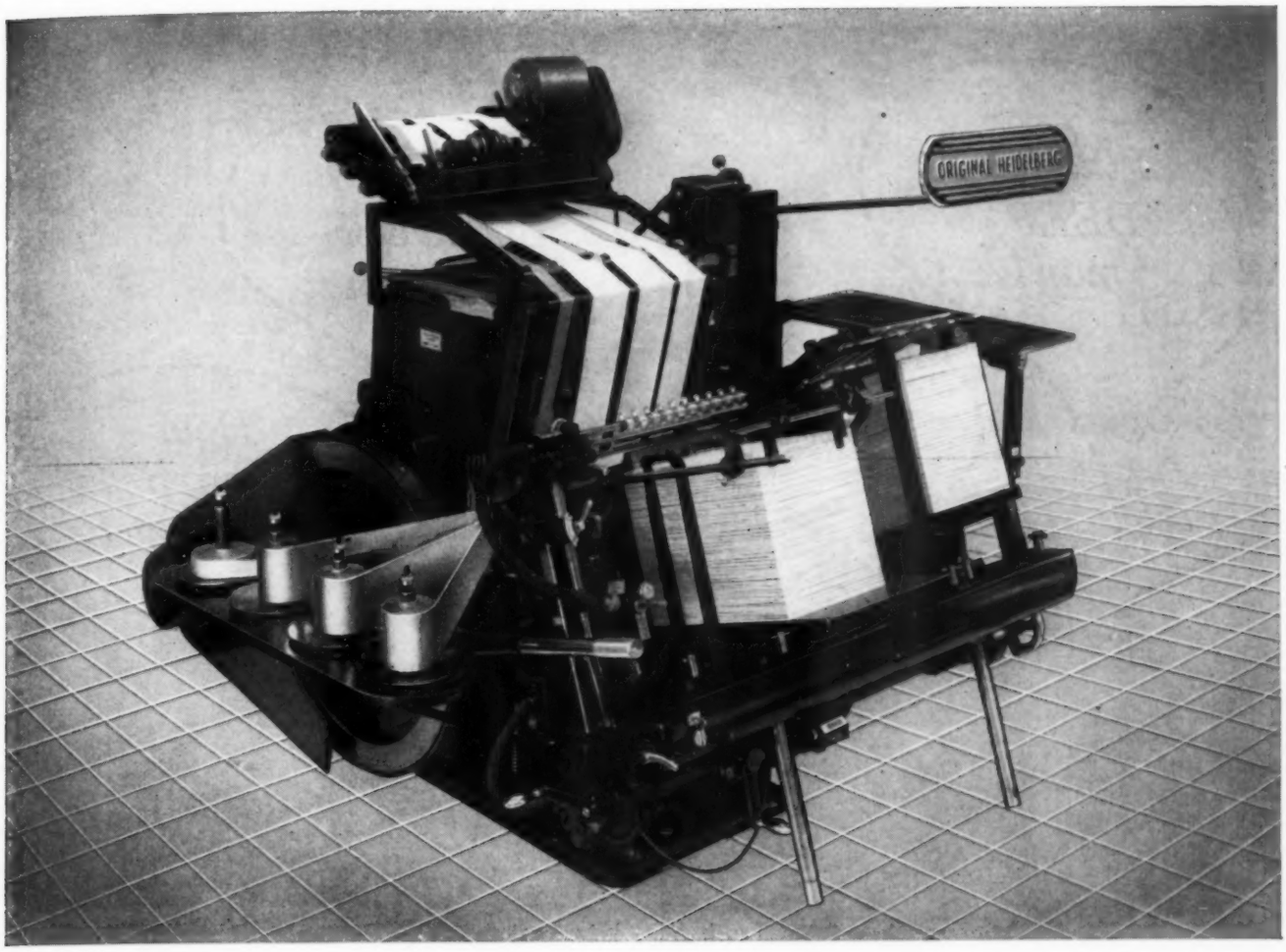
Victor Martocci Dies—Victor Martocci, 69, founder and vice president, Industrial Lithographic Co., Inc., Brooklyn, died Nov. 19 at his home. Along with his brothers, Mr. Martocci founded the firm in 1913.

Fairchild Graphic Promotes Seide—Leonard Seide has been named manager of engineering for Fairchild Graphic Equipment, Div. of Fairchild Camera and Instrument Corp. Formerly, Seide served Fairchild Graphic as program chief in charge of the electronics section and as a design engineer. In his new position, Seide replaces Dr. S. W. Levine who was recently appointed director of engineering for the Defense Products Div. of Fairchild Graphic Equipment.

Ends 50 Years With Goss—Albert Janda, Elgin, Ill., has retired from Goss Company, Div. of Miehle-Goss-Dexter, after 50 years of service. He served as a member of the erection crew.

Minneapolis Group Elects Officers—C. E. Johnston, business manager, Beloit (Wis.) *Daily News* was elected president of Graphic Arts Industry, Inc., at the 83rd annual meeting held in Minneapolis. Other officers elected were: F. C. Schilplin, president, St. Cloud (Minn.) *Daily Times*, first vice president; Birger Swenson, general manager, Augustana Book Concern, Rock Island, Ill., second vice president; William Beddor, president, Japs Olson

(*Continued on Page* 12)



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With the 13 x 18" ORIGINAL HEIDELBERG Roll Leaf Press, stamping at top speeds is an actuality. Here's why:

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- Extra heavy duty calibrated thermostat keeps heating plate constant at precise temperature required.
- Well known ORIGINAL HEIDELBERG *modern design* and precision construction.

By simply disconnecting the Roll Leaf Feeder, you can use this versatile ORIGINAL HEIDELBERG for embossing, die-cutting, creasing, cutting, scoring and perforating.

Four rolls can be fed simultaneously. Novel method of feeding permits use of larger diameter rolls which further increases production due to fewer press stops . . . and different colored rolls can be run at same time.

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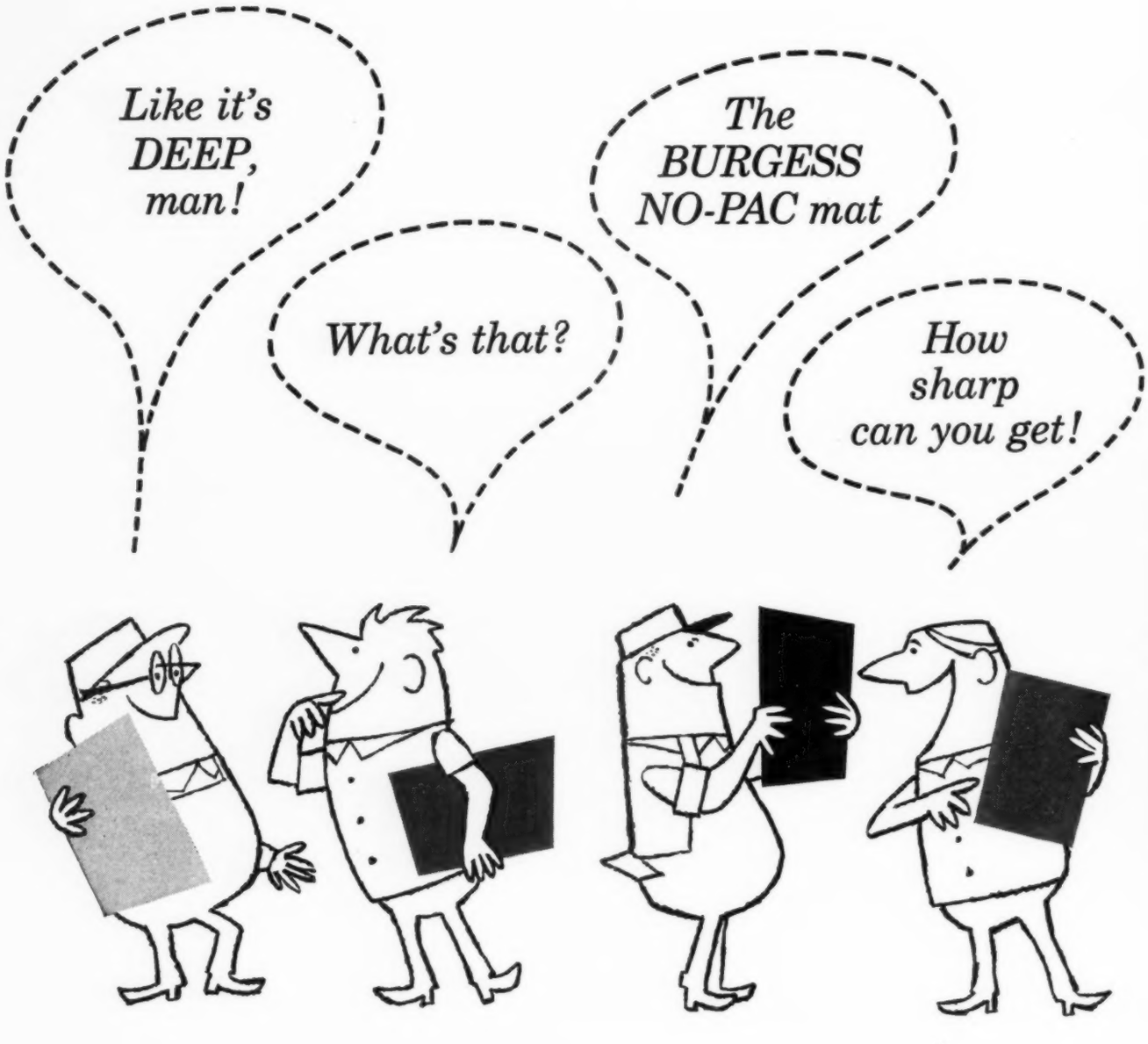

New precision equipment and new production control bring a new quality to the already top-quality Burgess No-Pac one-piece mat. Increased depth gives you an amazing degree of sharp, clean reproduction. The new No-Pac mat is one more reason why Burgess is biggest and best.

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A Laboratory Product
BURGESS Chrome MATS

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NEW CHEMCO ZINC-MATIC

Powderless Etching Machine

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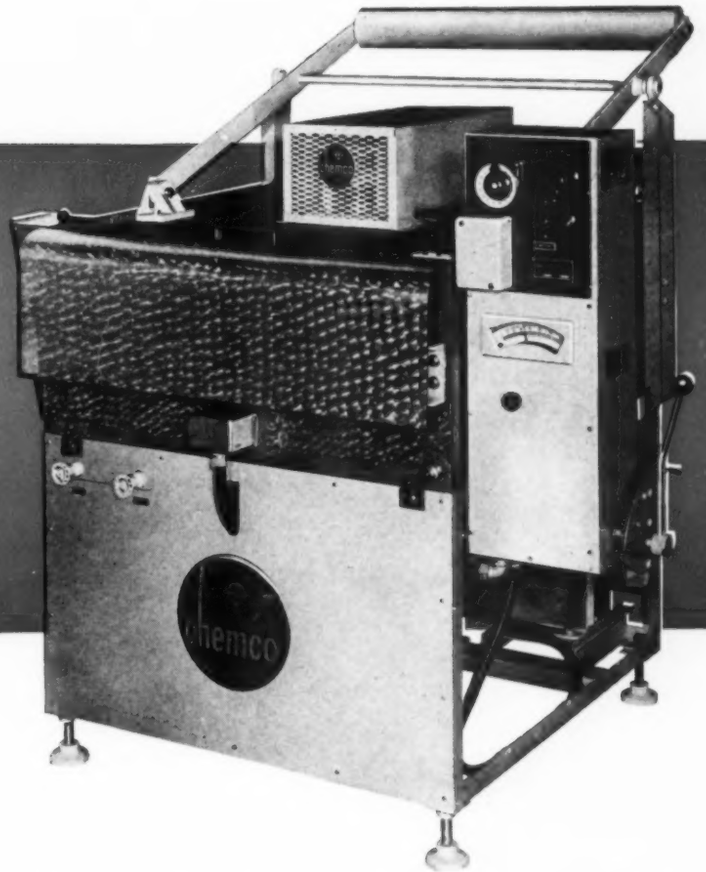

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1. Has greater bath capacity—32 gallons
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3. Has better splash control—4-paddle design
4. Has better bath agitation—emulsionizer method
5. Revolving plate holder automatically reverses direction during etching cycle.

Zinc-Matic is designed and built for long, trouble-free practical usefulness.

Here's why:

1. Wide range—etches plates from 5″ x 8″ to 20″ x 24″ in size
2. Stainless steel construction—wherever bath is in contact
3. Calibrated speed control—runs the right speed without watching
4. New port permits bath formulation and acid addition with cover closed and ventilator running

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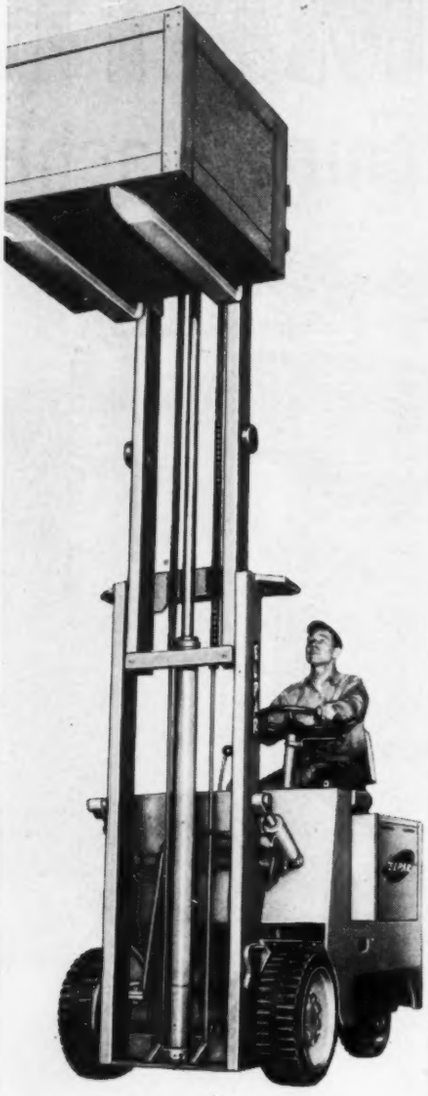
ACRO-SMOOTH



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News Items

(Continued from Page 8)

Co., Minneapolis, third vice president; Bruce J. Nelson, business manager, Eau Claire (Wis.) *Daily Leader & Telegram*, treasurer; and Paul J. Ocken, Minneapolis, vice president-general manager.

New Royal Zenith Los Angeles Quarters—West Coast headquarters of Royal Zenith Corp. has been moved to a new location at 1350 Broadway, Los Angeles, which will constitute the regional sales and service center for all Royal Zenith lines. A continuous series of classes in the operation of Royal Zenith offset presses will be given in the new showroom. These classes will be open to pressmen, foremen, and production supervisors on request and without cost.

Grunow Represents Douthitt—William J. Grunow has been appointed nationwide factory sales representative by Douthitt Corporation. In this position, Grunow will contact dealers, instruct them on the use of Douthitt equipment and work with them on solving problems.

GRUNOW

HANSON

Goss Transfers Hanson—Herbert E. Hanson has been transferred to the Chicago sales office of the Goss Company, Div. of Miehle-Goss-Dexter, Inc. Previously, Hanson was a sales representative in San Francisco. Hanson's appointment to a newly created staff post will include general administrative duties and the correlation of market data, statistics, communications and product planning activities.

Bolton Representative—Eugene J. White has been appointed sales representative for John W. Bolton & Sons, Inc., in the territory covering Southern New Jersey, Pennsylvania, Maryland, Delaware, and Washington, D. C.

ATF Appoints Type Dealers—Midwest Printers Supply Co., Cincinnati, and Milwaukee Printing Machinery Co., Milwaukee, have been appointed authorized ATF type dealers. The Milwaukee company is managed by Phil Hardin and will supply the Wisconsin area. William Roe is president of Midwest, which will serve southern Ohio, northern Kentucky and parts of Indiana.

Beckham Promoted by Washington Firms—John S. Beckham has been named general manager of Graphic Arts Press, Inc. and Washington Planograph, according to Ira H. Kaplan, executive vice president of both firms. Beckham has been serving as plant manager of both firms and is a past president of the Printing Industry of Washington, D. C. The Beckham appointment coincides with the $750,000 expansion program undertaken by the firms.

BECKHAM

ROBINSON

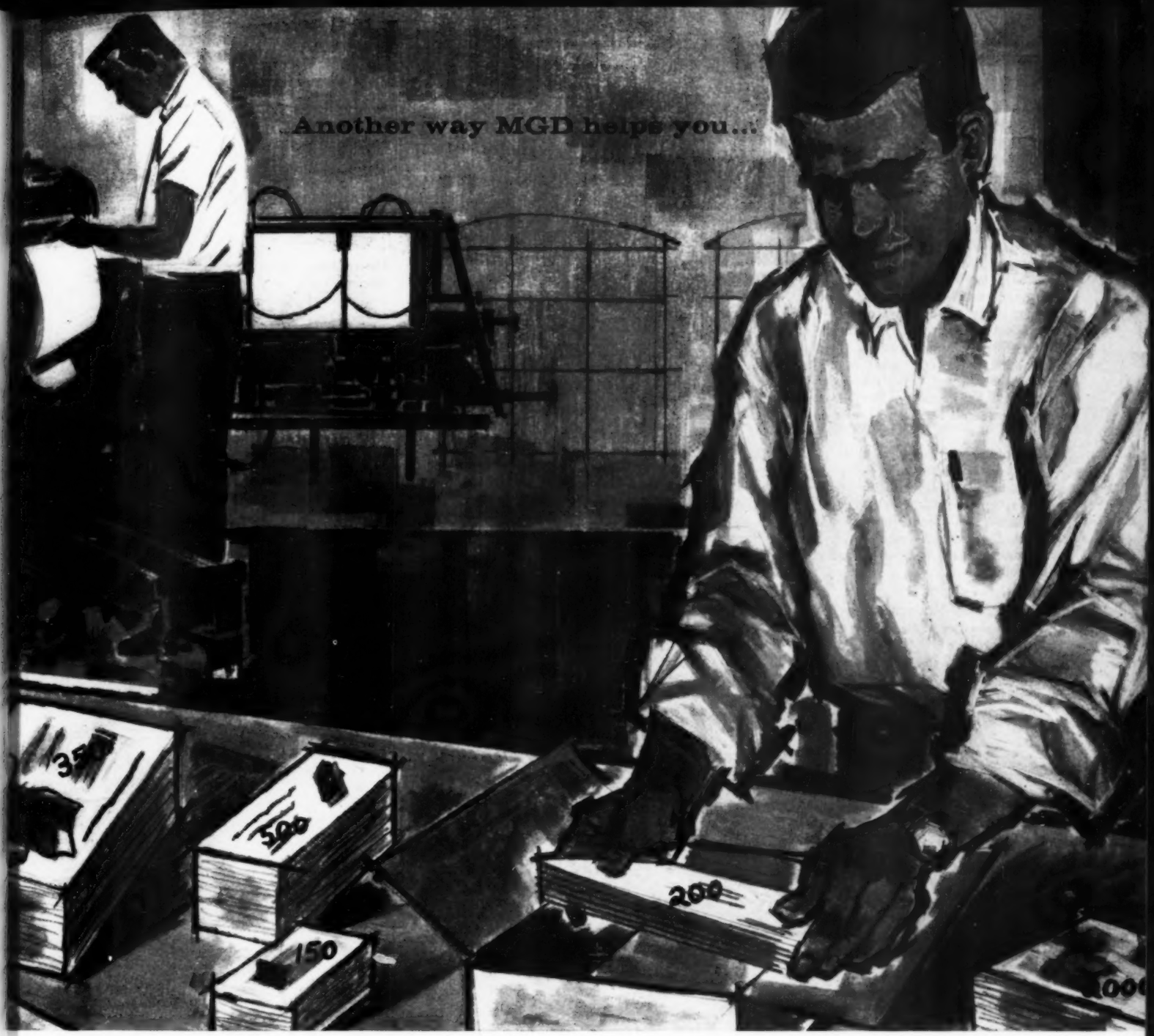
Pitman Sales Representative—Clyde M. Robinson has been appointed to the sales staff of Harold M. Pitman Co., according to Paul F. Schmidt, chairman of the board.

Rejoins Lake Erie Machinery—Charles A. Steinhauser has rejoined Lake Erie Machinery Corp. as manager, Printing Equipment Div. Steinhauser originally became associated with Lake Erie as sales engineer in 1951, subsequently becoming sales manager, Printing Equipment Div. In 1958, he resigned from the latter position to join Koehler Electrotype Co., Buffalo, N. Y., as sales manager.

Peter C. McCabe Dies—Peter C. McCabe, 67, engineer specializing in service to the Graphic Arts industries for the past 17 years, died at his home, Wilmette, Ill., Dec. 12. For eight years prior to 1942, Mr. McCabe served as Chicago district manager for Austin Company.

Named Tex-N-Set Manager—Earl Doxsee has been named vice president and general manager of Tex-N-Set Manifold Co., Inc., Arlington, Tex.

Cylinders, Inc. Changes Ownership—Cylinders, Incorporated, manufacturer of rotogravure engraved cylinders, has been purchased by Howard A. Schumacher, Rochester, N. Y. Schumacher, formerly vice president of Graflex, Incorporated, and past president of the National Assoc. of Photographic Manufacturers, Inc., is to be president of the company. Walter Zwarg will continue as general manager of the firm, Robert W. Stirling, formerly president of



Make Short Runs Pay Off! Start Fast, Finish Fast With Miehle Vertical Stand-Up Operation

Don't let lost motion and operator fatigue rob you of profits on short runs. The Miehle Vertical makes the pressman's job easier...lets him set up and run in a comfortable, stand-up position...enables him to do more short run jobs *faster*.

There's no stretch on the Vertical when loading the feeder or when making ready on the cylinder. There's no bending or squinting at the delivery when inspecting sheets or removing the load. This is true *stand-up operation*.

And remember, the Miehle Vertical is still the only real job press. It does just about everything ...short runs, long runs, color work, imprinting, envelopes, numbering, perforating, scoring, two-sheet printing, simple forms...and does them all *at a profit*.

Make *your* next job press a Miehle V-50 Vertical.

THE MIEHLE COMPANY
Division of Miehle-Goss-Dexter, Inc.
Chicago 8, Illinois

For More Information Circle 117 on Reader Service Card

National Gravure Cylinders Corp., will be superintendent of engraving. The company's facilities are to be relocated in Palmyra, N. J. The new plant has a capacity of more than double that of the Grenloch, N. J., building.

Dayton Overseas Sales Company—Dayton-Hevea, a company to sell rubber products in Europe, has been formed jointly by Dayton Rubber Company and N. V. Vereenigde Nederlandsche Rubberfabrieken (popularly known as Hevea). Among the products to be sold by the new company are printing and industrial rollers. Details for the joint company were made for Dayton through Dayton Rubber International, a recently formed division to coordinate all the firm's overseas activities.

Comptometer Vice President—Harold R. Salisbury has been elected vice president in charge of the Business Forms Div., Comptometer Corporation. In addition, Salisbury will continue as general manager, Nebraska Salesbook Co. and U. S. Business Forms Co., subsidiaries of Comptometer.

To Become Miehle Manager—Charles D. Kayser has been transferred to the Los Angeles office of Miehle Company, Div. of Miehle-Goss-Dexter, Inc. Kayser is to work closely with Territory Manager, C. R. Endicott, who will be retiring soon under the company's compulsory retirement plan. The two men will share responsibility for all sales activities of Miehle, Dexter and Lawson divisions in southern California, Arizona and southern Nevada.

KAYSER

ASHLEY

ATF Florida Dealer—General Printing Equipment & Supply, Inc., Miami, has been appointed authorized ATF type dealer for most of the state of Florida, according to an announcement made jointly by American Type Founders Co., Inc., and the new dealer.

LPNA Label Division Head—Charles C. Rossotti, chairman of the board, Rossotti Lithograph Corp., North Bergen, N. J., was elected president of the Label Manufacturers Div. of the Lithographers & Printers National Assoc. at the annual fall meeting in Chicago. Rossotti succeeds James L. Murphy, vice president, Consolidated Lithographing Corp., Carle Place, N. Y.

DIPCO Sales Engineer—Wilbur W. Ashley has been appointed sales engineer by Dayco Div., Dayton Industrial Products Co., Div. Dayton Rubber Co. In this position, Ashley will handle sales of Graphic Arts rollers, litho blankets, color separators, and fountain dividers in the Chicago area.

Distributes British Machines—The Camco line of knife folding machines for book and publication work is now available through Crawley Book Machinery Co., Newport, Ky., according to a joint announcement by Arthur S. Crawley, president of Crawley, and William G. Harper, president of Camco Machinery Co., England.

Completes 30 Years With Goss—William Zimmer has completed 30 years of service with Goss Company, Div. of Miehle-Goss-Dexter, Inc. Appointed chief engineer during April of 1959, Zimmer started at Goss as designing engineer in 1929. He has also served the company as supervisor of the magazine section and as assistant chief engineer.

Michigan Carton Elects Two—Robert G. Pender has been elected vice president, board sales; and Louis J. Philipps, vice president, engineering of Michigan Carton Co. Retiring as Michigan Carton vice president and manager of the Chicago sales office is Dan Int-Hout, sr.

Hammond

FULL-PAGE ELECTRIC

Scorcher

The Hammond Model T23-30 Full-Page Electric Scorcher is built to scorch and pre-shrink mats with maximum speed and uniformity. Ample 23" x 30" capacity for complete scorching of full-page mats with tail-pieces. Patented "egg-crate" cover allows maximum moisture elimination and provides rigidity and flatness. Aluminum bed plate for fast heat-up and even heat distribution. Complete with thermostat control, bell timer and cover supports for mat pre-shrinking.

Hammond Machinery Builders INC. / 1604 DOUGLAS AVE., KALAMAZOO, MICHIGAN

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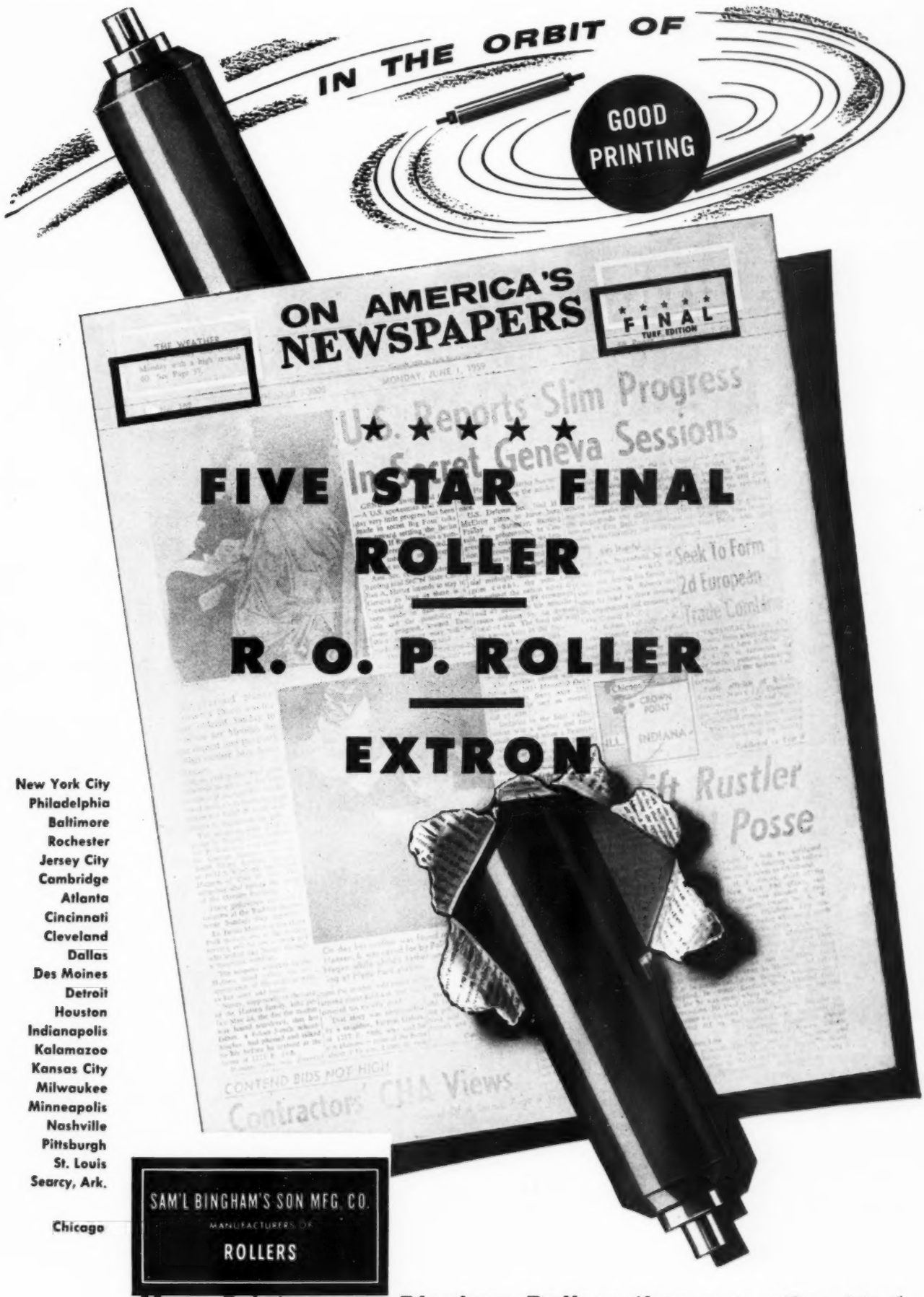

New York City
Philadelphia
Baltimore
Rochester
Jersey City
Cambridge
Atlanta
Cincinnati
Cleveland
Dallas
Des Moines
Detroit
Houston
Indianapolis
Kalamazoo
Kansas City
Milwaukee
Minneapolis
Nashville
Pittsburgh
St. Louis
Searcy, Ark.

Chicago

SAM'L BINGHAM'S SON MFG. CO.
MANUFACTURERS OF
ROLLERS

More Printers use Bingham Rollers than any other kind

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MEETINGS for the PRINTING INDUSTRY

American Photoengravers Assoc.—1960 Conv., Hotel Statler, Buffalo, N. Y., Oct. 9-12. Exec. Secy. Frank J. Schreiber, 166 W. Van Buren St., Chicago 4.

ANPA Mechanical Conf.—1960 Conf., Hotel Americana, Miami, Fla., June 19-22. Mgr. Richard L. Lewis, ANPA Mechanical Dept., 750 Third Ave., New York 17.

Book Manufacturers' Institute — 1960 Conf., Boca Raton Hotel, Boca Raton, Fla., Oct. 19-22. Secy. Miss A. G. Watson, 25 W. 43rd St., New York 36, N. Y.

Flexographic Technical Assoc.—1960 Meeting, Palmer House, Chicago, Feb. 4-5. Exec. Secy. Julian Ross, 220 W. 42nd St., New York 36, N. Y.

Graphic Arts Assoc. Executives—1960 Convs., Spring Meeting, Chicago, Apr. 4-5; Fall Meeting, Washington, D. C., Oct. 21-22, Secy.-Treas. Thomas J. Curran, Exec. Secy. Label Mfrs. Natl. Assoc., Inc., 1025 Connecticut Ave., N.W., Washington 6, D. C.

Gravure Technical Assoc. — 1960 Conv., Hotel Commodore, New York, N. Y., Mar. 2-4. Exec. Secy. Edward S. St. John, Room 4800, 30 Rockefeller Plaza, New York 20.

Great Lakes Mechanical Conf.—1960 Conf., Hotel Schroeder, Milwaukee, Wis., Jan. 17-19. Secy.-Treas. Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press.*

Fifth District Craftsmen's Conf.—Secy.-Treas. George W. Thompson, Toledo Colortype Co., 1711 Jefferson Ave., Toledo, O.

Intl. Assoc. of Electrotypers & Stereotypers, Inc.—1960 Conv., Continental-Hilton Hotel, Mexico City, Mexico, Oct. 23-26. Exec. Secy. Floyd C. Larson, 758 Leader Bldg., Cleveland 14, Ohio.

Intl. Assoc. of Printing House Craftsmen—1960 Conv., Hotel Biltmore, Atlanta, Ga., Aug. 7-10. Exec. Secy. Pearl E. Oldt, 411 Oak St., Cincinnati 19, O.

Intl. Graphic Arts Education Assoc. — 1960 Conf., University of Houston, Houston, Aug. 18-23. Exec. Secy. Samuel M. Burt, 5728 Connecticut Ave., N.W., Washington 15, D. C.

Intl. Printers Supply Salesmen's Guild—Secy. Charles S. Tompkins, Tompkins Printing Equipment Co., 1040 W. Grand Blvd., Detroit 8.

Intl. Typographic Composition Assoc.—1960 Conv., Hotel Statler Hilton, Dallas, Oct. 19-22. Exec. Secy. McKinley M. Luther, Washington Bldg., 15th St. and New York Ave., N.W., Washington 5, D. C.

Iowa Newspaper Mechanical Conf.—1960 Conf., Hotel Fort Des Moines, Des Moines, Iowa, Apr. 9-10. Secy.-Treas. Paul F. Kamler, Mechanical Supt., Clinton, (Ia.) *Herald.*

Kansas-Missouri Newspaper Mechanical Conf.—Kansas Gen. Mgr., Larry Miller, Kansas Press Assoc., 701 Jackson St., Topeka, Kans. Missouri Secy-Treas. Willaim A. Bray, Missouri Press Assoc., 115 Walter Williams Hall, Columbia, Mo.

Lithographers and Printers National Assoc.—1960 Conv., Hotel Boca Raton, Boca Raton, Fla., Apr. 25-28. Exec. Dir. Oscar Whitehouse, 1025 Connecticut Ave., N.W., Washington 6, D. C.

Mid-Atlantic Newspaper Mechanical Conf.—1960 Conf., Bellevue-Stratford Hotel, Philadelphia, Pa., Mar. 17-19. Gen. Mgr. G. Richard Dew, 2717 N. Front St., Harrisburg, Pa.

National Assoc. of Litho Clubs, Inc.—1960 Conv., Hotel Statler Hilton, Boston, Mass., May 19-21. Exec. Secy. Raymond E. Geegh, 1915-33rd St., S. E., Washington 20, D. C.

National Assoc. of Photo-Lithographers—1960 Conv., Conrad Hilton Hotel, Chicago, Oct. 5-8. Exec. Dir. Walter E. Soderstrom, 317 W. 45th St., New York 36, N. Y.

National Paper Trade Assoc.—1960 Conf., Hotel Waldorf Astoria, New York, N. Y., March 27-30. Exec. Secy. O. Glenn Leach, 220 E. 42nd St., New York 17, N. Y.

National Printing Equipment Assoc., Inc.—1960 Meeting, Sheridan-Park Hotel, Washington, D. C., Oct. 25-26. Secy. James E.

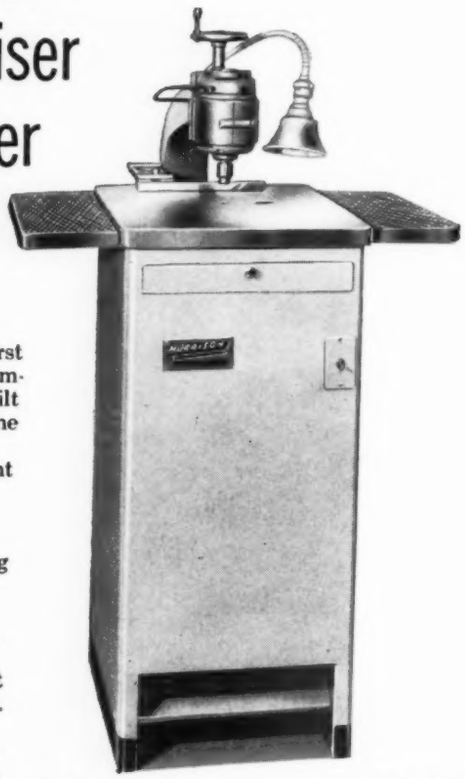
(*Continued on Page 24*)

TRIPLE DUTY TIME-SAVER for

- *Composing Rooms*
- *Stereotype Departments*
- *Engraving Plants*
- *Electrotype Foundries*

MORRISON

Router
Mortiser
Planer



HERE, for the first time, is a *single* compact, precision-built production machine that performs THREE important jobs in every newspaper and printing plant — Routing, Mortising and Type High Planing . . . and completes all three jobs faster, easier, safer, with more accuracy, at tremendous savings in both time and labor! No need to invest in costly *single-purpose* machines. No need to tie up valuable floor space with three machines, when the new MORRISON ROUTER-MORTISER-PLANER does so much more — so much better.

Prove this in your plant. Write or phone for complete details and prices.

Address Dept. P., 125 W. Melvina St., Milwaukee 12, Wisconsin

MORRISON
Symbol of Operating Economy
THE MORRISON COMPANY
MILWAUKEE 12, WISCONSIN

For More Information Circle 127 on Reader Service Card

WHEN YOU'RE IN THE MARKET FOR QUALITY EQUIPMENT SPECIFY HOE!

Products manufactured by **Hoe Press Division**

COLORMATIC* and
COLOR-CONVERTIBLE* newspaper presses for metropolitan newspapers.
SATELLITE* Multi-color web offset presses, which provide a new high quality in multi-color web offset reproduction for newspaper supplements and periodical work.
PRINTMASTER* presses, double and single width, for medium-circulation daily and weekly newspapers.
Rotogravure presses for multi-color newspaper supplements, comic and magazine sections, and volume monotone runs.
Magazine presses for top quality volume runs in up to five and six colors.
Sheet-fed and web-fed offset presses for high quality printing.
Metal decorating presses for color lithography on bottle crowns, cans, pails, drums and other containers.
Full automatic reel, tension and full-speed web-splicing mechanisms.

Products manufactured by **M.A.N.**

Plate casting machines.
Multopress automatic hydraulic matrix presses.
Rotogravure presses (narrow width).
Letterpress magazine and book presses.
Plate shaving, routing and trimming machines.

Products manufactured by **De La Rue & Co., Limited**

Intaglio presses for currency printing.

Products manufactured by **Hoe Saw Division**

Solid- and chisel-tooth circular saws and parts.
Band saws for wood and metal cutting.
Carbide-tipped saws and tools.
Cutter heads and machine knives.
Hand and rotary saw sharpeners.
Grinding wheels, all standard sizes and grains.
Files and hacksaws.

Products designed and manufactured by **Hoe Industrial Division**

Design and manufacture of machines for any purpose, particularly those requiring advanced engineering and precision workmanship.
Ordnance work, both design and manufacture. Hoe has been a prime or sub-contractor on ordnance items since 1847.
Precision machine tools — produced to close tolerances and exact alignments, to customer specifications.
Aircraft jigs and fixtures and parts.

Products designed and manufactured by **Hoe Foundry Division**

Gray iron castings up to 40,000 lbs.
Weldments.
Heavy machining.

*TRADEMARK

R. HOE & CO., INC.

910 East 138th Street • New York 54, N. Y.

PLANTS: New York, N. Y.; Dunellen, N. J.; Portland, Ore.; Seattle, Wash.; Birmingham, Ala.; High Point, N. C.

BRANCH OFFICES: Boston, Chicago, Dallas, Memphis, Miami, San Francisco

LATIN AMERICAN AGENTS: A. M. Carneiro & Co., New York, Rio de Janeiro, Buenos Aires, Havana

Another "first" from Cutler-Hammer

NEW AUTOMATIC NEWSPAPER COUNTER-STACKER

cuts mail room handling time and costs

How efficient is your mail room operation? Can it keep pace with your presses when running top speed, or is it a production bottleneck? Is your mailroom efficient during slow-speed collect runs? These are problems many newspaper publishers have faced, and here's the solution to their problems . . . the new, fully automatic Cutler-Hammer Newspaper Counter-Stacker. This amazing Counter-Stacker links the newspaper conveyor to the bundle tying machine providing a smooth continuous flow of newspapers from press to truck dock regardless of press speed, pages per issue, or papers per bundle.

The new Cutler-Hammer Counter-Stacker is flexible, accurate, and dependable. The papers-per-bundle "count" is adjustable to produce bundles with as few as 15 papers or as many as 100, and the size of the issue can vary from 12 pages to 128 pages.

The performance of the Counter-Stacker at the MILWAUKEE JOURNAL and the CHICAGO DAILY NEWS gives proof of its accuracy and dependability. Where the Counter-Stacker has been in daily operation there have been no production interruptions due to mechanical failures or "mis-counts".

Get all the facts today. See how the Cutler-Hammer Newspaper Counter-Stacker can cut your mail room handling time and costs. Write Dept. A277, Cutler-Hammer Inc., Milwaukee 1, Wisconsin.

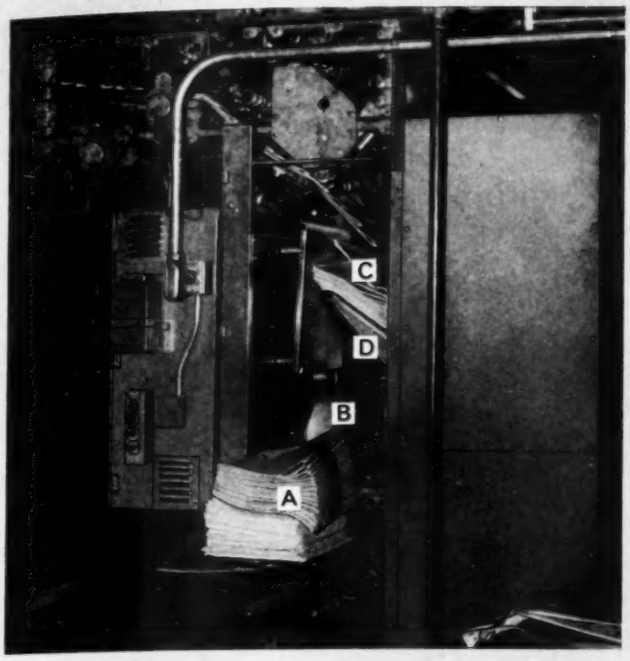
CUTLER-HAMMER

CUTLER-HAMMER CONTROL C-H

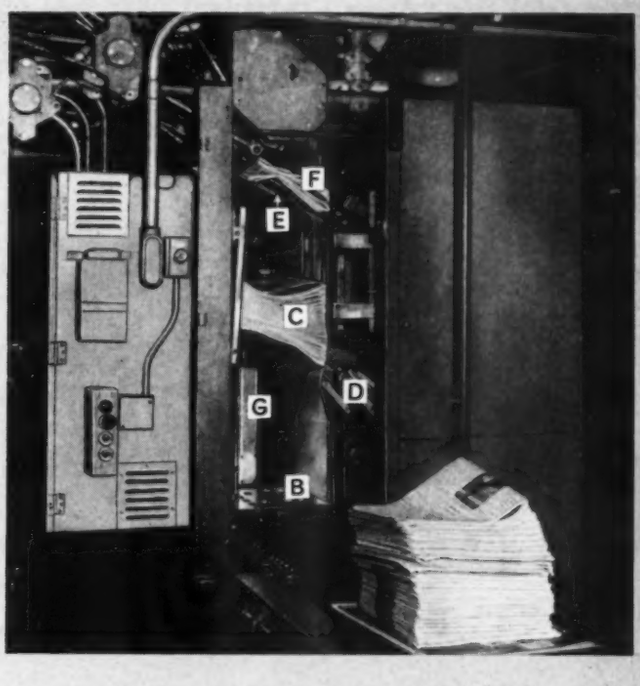
Cutler-Hammer Inc., Milwaukee, Wis. • *Division:* Airborne Instruments Laboratory. • *Subsidiary:* Cutler-Hammer International, C. A.
Associates: Canadian Cutler-Hammer, Ltd.; Cutler-Hammer Mexicana, S. A.; Intercontinental Electronics Corporation.

For More Information Circle 47 on Reader Service Card

Now automatic newspaper counting and stacking . . .

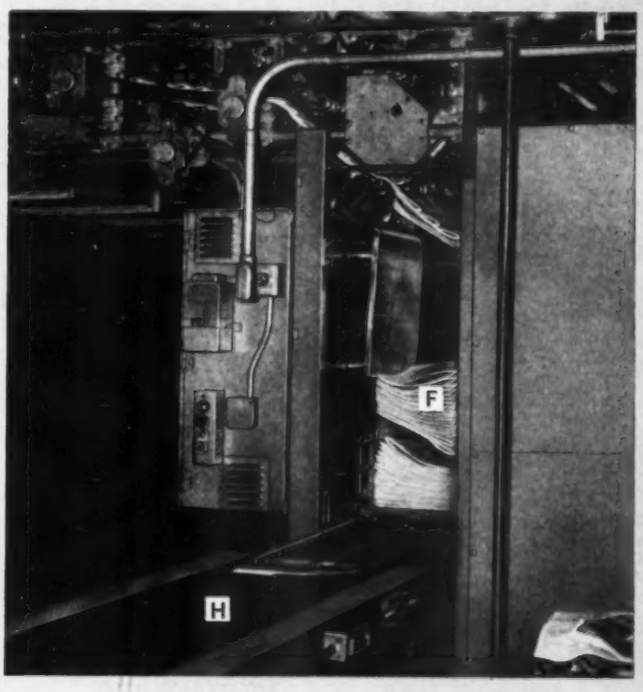


As a completed bundle of 50 newspapers A is ejected from the stacker basket B , the first 25 newspapers of the next bundle C are accumulated on the retractable collector D .



When the count reaches 25, the collector D retracts dropping the first 25 newspapers C into the stacker basket B . Simultaneously, the interceptor E begins collecting the second 25 newspapers F . Note the ejecting ram G at rest.

The collector D returns relieving the interceptor E . The stacker basket B rotates 180° to reverse the paper fold of the first 25 newspapers C to provide maximum bundle stability.



Again as the count reaches 25, the collector retracts dropping the second 25 newspapers F onto the first. The ejecting ram discharges the completed bundle onto the tying machine conveyor H to complete the cycle.

NOW... *you can choose from three sizes of*

Vandercook Universal Test Presses

These three vastly improved machines will perform every proving operation better and faster, with less effort and more economically.

Study These Time and Labor Saving Features

- Accurate, Rigid Impression — *for highest quality proofs with hairline register.*
- Available either *hand or power* operated.
- Plastic covered Inking System.
- Automatic Register Vacuum Plate Base—*for proving original and duplicate plates* from .015″ to .240″ in thickness without plate hooks.
- Power Inking and Automatic Washup.
- Adjustable Bed—*as accurate and as rigid as a fixed bed.*
- Power Operated Grippers—*for automatically opening and closing sheet grippers.*
- Automatic Sheet Delivery.
- Automatic Frisket.
- Automatic Ink Feed.

VANDERCOOK & SONS, INC.

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3601 W. Touhy Ave., Chicago 45, Ill. Phone: ROgers Park 1-2100

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Sears Limited

Western Sales and Service
3156 Wilshire Blvd., Los Angeles 5, Calif.
Phone: DUnkirk 8-9931

SPECIFICATIONS

UNIVERSAL I — *Sheet Size 15¼″ x 24″*
UNIVERSAL III — *Sheet Size 18¾″ x 28″*
UNIVERSAL IV — *Sheet Size 32⅞″ x 29½″*

For More Information Circle 182 on Reader Service Card

For More Information Circle 96 on Reader Service Card→

LOOKING FOR

IN LETTERPRESS INKS?

Speed King's 18 easy-to-mix colors and black are all you need for fast, high quality color work. Packed in 1 and 5 lb. cans, ready to run on any job in the shop. Ask your IPI man for a Speed King color card . . . it tells the whole story!

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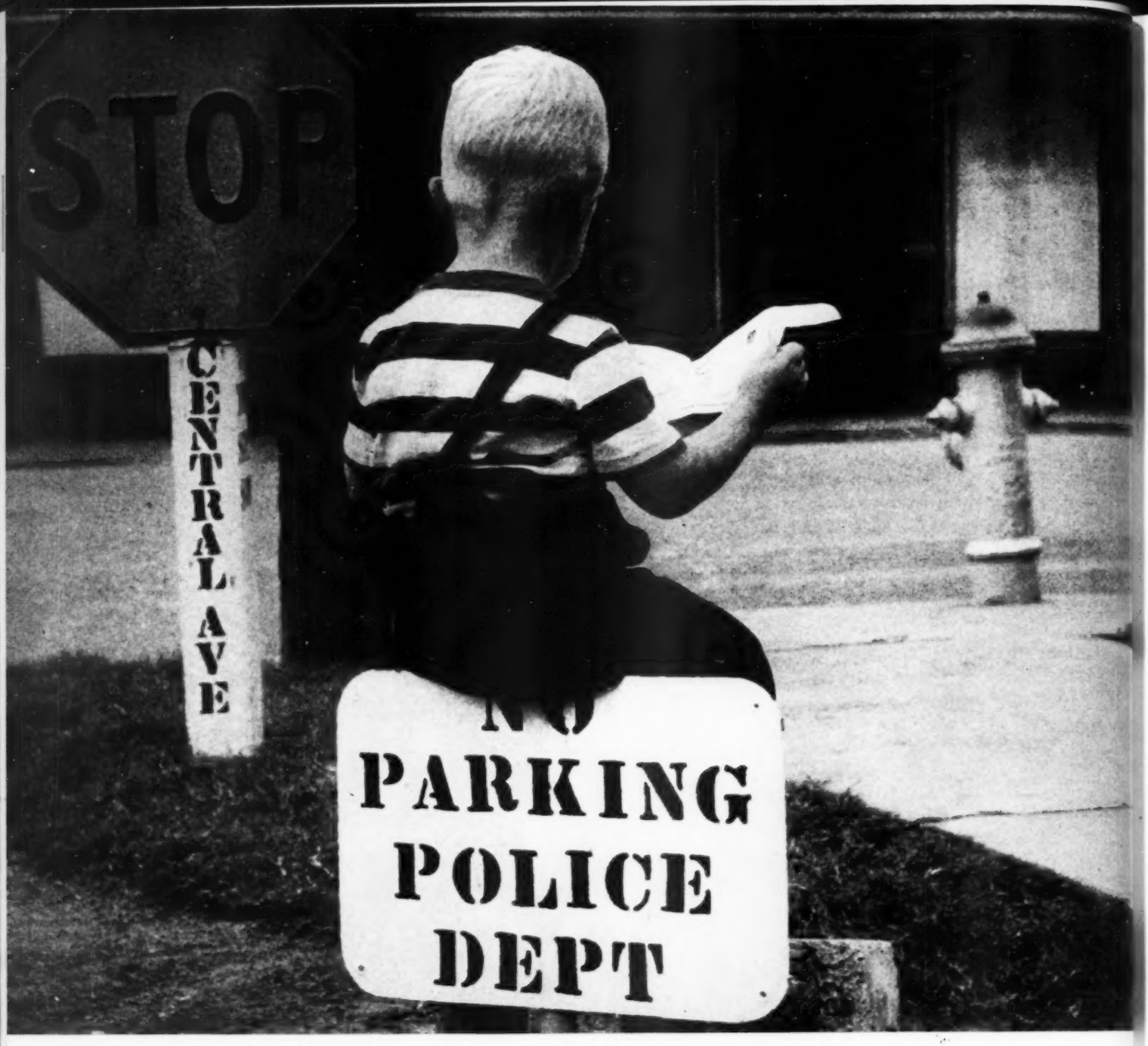

You reproduce more of the APPEAL of a good photo

when you print direct from Fairchild Originals

An appealing photo, like the one above, must have sharp, clean reproduction to catch the full warmth and humor of the situation. This is why your craftsmanship is so important. It's also one reason why direct printing, with original halftone engravings made on a Scan-A-Graver® or Scan-A-Sizer®, pays off for so many newspapers. There's never any loss of detail. Reproduction is always sharp and clean, catches the full range of photographic values... captures the feeling of the photo.

Here's another reason why direct printing with Fairchild originals pays off: you can work closer to deadlines . . . you don't have to wait for last-minute cuts. You simply make your stereos, then attach flexible, easy-to-mount Fairchild engravings directly to the stereo, (see photo at right) and go to press.

In commercial printing, too, your work is simplified, because Fairchild engravings are tough, resilient, easy to trim . . . need less make-ready. They can be flat mounted on patent base, metal or wood, or molded for electrotypes.

For full information, write today for 16-page illustrated brochure. Fairchild Graphic Equipment, Dept. 91, Fairchild Drive, Plainview, L. I., N. Y.

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Division of Fairchild Camera and Instrument Corp.

SCAN-A-GRAVER® • SCAN-A-SIZER®
Electronic Engraving Machines

District Offices: Eastchester, N. Y.; Atlanta, Ga.; Chicago, Ill.; Los Angeles, Calif.; Toronto, Ont.

Full Page Newspaper Color gets 3 to 10 times more retention and buying action than b & w

An Atlanta, Ga., bank reports that three times as many people read the bank's home loan newspaper advertisement in color as in b & w.

The Milwaukee Journal reports that color increased men's readership by 67 percent, while women's readership increased by 44 percent. Retention figures 5 days after publication: men, 125 percent; women 67 percent.

In Shreveport, La., a new beer was purchased in 88% of the homes receiving the newspaper carrying the beer's exclusive full-color introduction campaign.

The slick-paper magazines today get the advertisers' big money because they have proved the superior selling power of 4-color advertising—

and can guarantee accurate register, beautiful reproduction and strong development of impulse buying.

You can get a bigger share of the advertiser's budget for 4-color newspaper advertising by assuring the same hairline register, the same striking reproductions, the same sales-making action from readers—

if you depend upon the new Certified Blue Ribbon CC Mat that eliminates the hazards of double stereotyping . . . stops faulty register . . . and ends image distortion on the 4-color printed sheet.

Certified Blue Ribbon CC Mats are molded by direct pressure and baked on the form. They go directly into the newspaper casting box for as many final curved casts as desired—each cast true to the original plate specifications.

Certified Dry Mat Corporation
555 Fifth Avenue, Dept. M, New York 17, N. Y.

For dependable stereotyping, rely on Certified Dry Mats

Certified
BLUE RIBBON MATS

Certified
BLUE RIBBON MATS

For every advertising need

Blue Ribbon UC Mat
Sensitive base and coating tough enough to withstand pull of undercut halftone dots render this mat a good choice for general newspaper campaign purposes. Can be used for vacuum casting of curved newspaper plates.

Blue Ribbon CC Mat
Primarily for curved page casts. Strong base and coating fit this mat for multiple casting in autoplate. As many as 25 casts have been made without impairment.

Blue Ribbon Regular Mat
Sensitive base and coating adapt this mat to utmost fidelity in reproducing copper, zinc or plastic plates.

Blue Ribbon BC Mats
Soft base with stronger facing to combat undercut halftone dots.

Blue Ribbon UCR Mats
Specially developed for conditions where undercutting is frequent.

Certified Silvertone Mats
Highest quality for magazine and book work.

For More Information Circle 36 on Reader Service Card

←*For More Information Circle 58 on Reader Service Card*

Going to a narrower measure?

. . . use STARNEWS

. . . Remember that 8 point STARNEWS is designed to give the same letter count on 11¼ picas as you now get on wider columns.

STARNEWS is intended for use in plants handling straight matter either manually or under tape control. Its lower case alphabet length of 110.6 points gives it an excellent letter count resulting in a space saving of about 6% as compared to most 8 point news and publication faces.

STARNEWS is available in combination with Bold Face and with Gothic. It is an easy reading face, its short ascenders and decenders allowing a well rounded unusually legible character.

Write for the new STARNEWS specimen folder.

The other day when a visitor was being shown through the Star Parts plant he exclaimed:

"I had no idea that all this went into the making of parts."

This is a typical reaction from those who have never been inside of a production machine shop. It is this which inspires us to explain what goes into the making of the Star parts you are using on your Linotype and Intertype machines.

A production machine shop, as distinguished from a general machine shop, is a highly complex

8 on 8½—Star News with Bold Face

The other day when a visitor was being shown through the Star Parts plant he exclaimed:

"I had no idea that all this went into the making of parts."

This is a typical reaction from those who have never been inside of a production machine shop. It is this which inspires us to explain what goes into the making of the Star parts you are using on your Linotype and Intertype machines.

A production machine shop, as distinguished from a general machine shop, is a highly complex

8 on 8½—Star News with Gothic

SPECIMEN ALPHABET

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 1234567890
abcdefghijklmnopqrstuvwxyz 1234567890
fiflffffifl ⅛¼⅜½⅝¾⅞
[($£.,:;'-'?!*†‡§¶/|%])
fiflffffifl ⅛¼⅜½⅝¾⅞
[($£.,:;'-'?!*†‡§¶/|%])

8☆A311—runs in 90 channel magazine.
Lower case alphabet.....110.6 pts.
Lower case characters per pica.. 3.05
Figure size ..... .0518
Comma, period, thin space..... .0346

SPECIMEN ALPHABET

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 1234567890
abcdefghijklmnopqrstuvwxyz 1234567890
fiflffffifl ⅛¼⅜½⅝¾⅞
[($£.,:;'-'?!*†‡§¶/|%)]
fiflffffifl ⅛¼⅜½⅝¾⅞
[($£.,:;'-'?!*†‡§¶/|%)]

8☆A313—runs in 90 channel magazine.
Lower case alphabet.....110.6 pts.
Lower case characters per pica.. 3.05
Figure size ..... .0518
Comma, period, thin space..... .0346

Precision TRADE ★ MARK Parts ®

STAR PARTS, Inc.
SOUTH HACKENSACK, N. J.

BRANCH: 1327 BROADWAY, KANSAS CITY, MO. **AGENCIES:** CHICAGO • MINNEAPOLIS • LOS ANGELES • DENVER SO. ACTON, MASS. • STAR PARTS (LINECASTING) CANADA LTD. MONTREAL AND AGENTS OVERSEAS

For More Information Circle 168 on Reader Service Card

Meeting Dates

(Continued from Page 16)

Bennet, 140 Nassau St., New York 38, N. Y.

National Safety Council Printing and Publishing Section—1960 Meeting, Nov. 17-21. Staff Rep. Harry C. Johnson, National Safety Council, 425 N. Michigan Ave., Chicago 11.

New England Composing Room Executives Assoc.—1960 Conf., Taunton Inn, Taunton, Mass., May 1960. Secy. Lewis R. Greene, Westerly (R. I.) *Sun.*

New England Newspaper Mechanical Conf.—1960 Conf., Hotel Statler-Hilton, Boston, Oct. 15-16. Secy.-Treas. Walter C. Crighton, New London (Conn.) *Day.*

New York State Capital District Mechanical Conf.—1960 Conf., Hotel Sheraton Ten-Eyck, Albany, N. Y., May 14-15. Conf. Dir. Floyd Laurenty, Albany (N. Y.) *Times-Union.*

Northwest Mechanical Conf.—1960 Conf., Hotel Leamington, Minneapolis, Feb. 27-29. Secy.-Treas. Ralph N. Carson, Dunwoody Industrial Institute, 818 Wayzata Blvd., Minneapolis, Minn.

Pacific Newspaper Mechanical Conf.—1960 Conf., Multnomah Hotel, Portland, Ore., Sept. 23-25. Secy. Donald Newhouse, Portland (Ore.) *Oregonian.*

Packaging Institute Assoc.—1960 Meeting, Hotel Statler, New York, N. Y., Oct. 31-Nov. 2. Exec. Dir. Chas. A. Feld, 342 Madison Ave., New York 17, N. Y.

Printing Industry of America—1960 Conv., Hotel Sheraton Park, Washington, D. C., Oct. 24-27. Gen. Mgr. Bernard Taymans, 5728 Connecticut Ave. N. W., Washington 15, D. C.

Research and Engineering Council—1960 Conf., Hotel Dayton-Biltmore, Dayton, O., May 23-25. Managing Dir. Robert E. Rossell, 5728 Connecticut Ave. N.W., Washington 15, D.C.

Screen Process Printing Assoc., Intl.—1960 Conv., Hotel Sherman, Chicago, Nov. 11-13. Exec. Secy. Robert H. Blundred, 549 W. Randolph St., Chicago 6.

SNPA (Eastern Div.) Mechanical Conf.—1960 Conf., Hotel Dinkler-Tutwiler, Birmingham, Ala., Aug. 14-16. Secy. Walter C. Johnson, jr., P. O. Box 1569, Chattanooga 1, Tenn.

SNPA (Western Div.) Mechanical Conf.—1960 Conference, Hotel Marion, Little Rock, Ark., Mar. 6-8. Secy. Claude V. Capers, P. O. Box 1569, Chattanooga 1, Tenn.

Southern Graphic Arts Assoc.—1960 Conv., Hotel Eola, Natchez, Miss., Apr. 21-23. Secy. Charles E. Kennedy, 1514 South St., Nashville 2, Tenn.

Technical Assoc. of the Graphic Arts—1960 Conf., Hotel Park-Sheraton, Washington, D. C., June 20-22. Secy.-Treas. Cyril A. Horton, Research Laboratories, Eastman Kodak Co., Rochester 4, N. Y.

Editor & Publisher Color Award

won by

REPUBLIC AND GAZETTE

PHOENIX, ARIZONA

Teamwork between advertising and mechanical departments, plus technical skill and adaptability, resulted in such fine color production that it won an Editor & Publisher Color Award for the Republic and Gazette. Examples of this color work enabled the newspaper to convince one of America's largest advertising agencies that the Republic and Gazette was well equipped to handle color advertising.

Equipped with 18 high-speed Scott Press Units, the pressroom of the Republic & Gazette is designed to print up to 60,000 pph per press delivery. Nine of these black and white units are equipped with color couples, providing utmost flexibility for color printing.

WALTER SCOTT & CO. *EXECUTIVE & SALES OFFICE: 501 FIFTH AVE., NEW YORK 17*

DIVISION OF **WOOD NEWSPAPER MACHINERY CORPORATION** Plant: Plainfield, N. J.

SCOTT presses

Walter Scott & Co. is proud of the fact that this 1959 Editor & Publisher Award for excellence in color printing came as a result of work done on Scott Press Units equipped with color couples. Scott Color Equipment can do the same for other newspapers and, if you are interested in color printing at its best, by all means allow a Scott Engineer to show you how Scott Equipment can solve your problem.

For More Information Circle 156 on Reader Service Card

The

QUALITY PEAK

IN PACKLESS MATS

Has Passed All Field Tests with Flying Colors!

The New Products Division of The Beveridge Paper Company announces the "Auto-Pack" mat, a new quality high in one-piece packless mats. Hundreds of field tests have proved Auto-Pack is over 50% compressible, that it can be molded with the same pressure as a standard mat and that wherever there is 0.040 depth in the form it will retain 0.030 to 0.035 space depth in the stereotype plate. That means 0.004 or 0.005 more space depth with less molding pressure than any other packless mat available today.

Easier to use than conventional mats, Auto-Packs completely eliminate the need of hand packing.

Write today for complete information, samples, or demonstration on the new Beveridge Auto-Pack stereotype mat.

NEW PRODUCTS DIVISION
THE BEVERIDGE PAPER COMPANY
705 WEST WASHINGTON STREET, INDIANAPOLIS 4, INDIANA, TELEPHONE: MElrose 5-4391

For More Information Circle 20 on Reader Service Card

LEADERS IN JOURNALISM
CHOOSE
LEADERS IN PRODUCTION

THAT'S WHY THE LEADING BUSINESS NEWSPAPER

THE WALL STREET JOURNAL.

NATURALLY CHOSE THE NEW

LINOTYPE COMET 300

Twenty-three new Comet 300's are going into brand new plants of the *WSJ* in Cleveland, Springfield, Mass., and in New York bringing their nationwide Comet battery to 57!

Why? Because the Comet 300 is the proven machine for fast, smooth, *dependable* production and the *Wall Street Journal* knows it can count on the Comet to get the news out while it's hottest.

The new Mat-Glide System makes this Comet 300 the smoothest of 'em all...for greater production, absolute dependability, mimimum maintenance and longer life for matrices and machine.

Ask your Linotype Production Engineer (or write Mergenthaler Linotype Company, 29 Ryerson Street, Brooklyn 5, N. Y.) to find out how the 300 will speed (and economize) *your* typesetting.

23 OF THEM! FOR A TOTAL OF 57

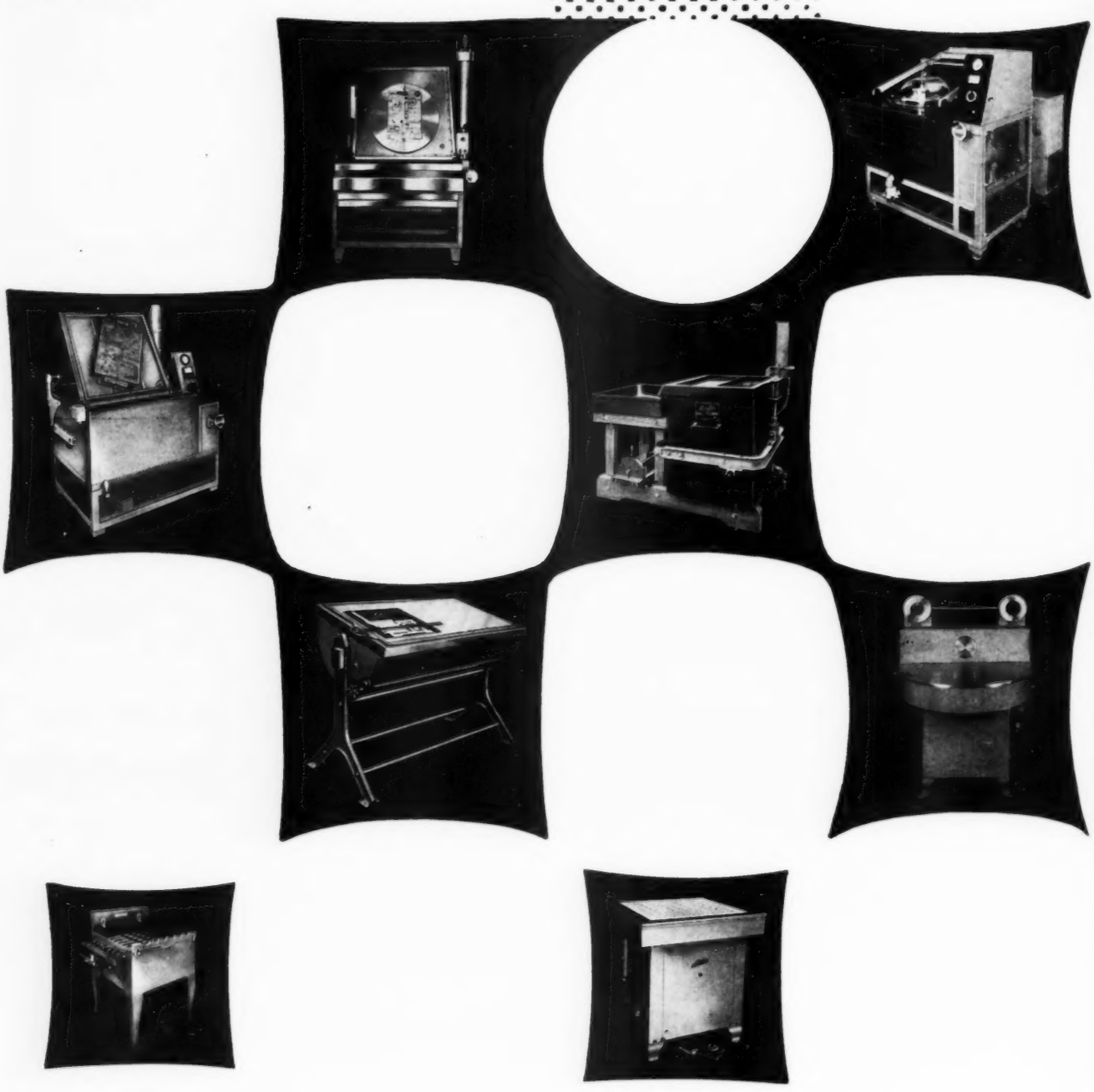
Printed in U. S. A.

For More Information Circle 116 on Reader Service Card

MASTER

the last word in plate making equipment

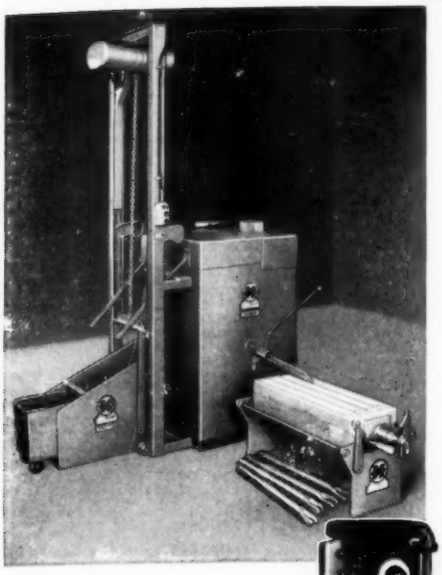
Powderless Etching Machines for Copper, Zinc and Magnesium • Conventional Etchers • Curved Plate Powderless Etchers and Supplementary Equipment • Whirlers • Developing Units • Powdering and Burning-In Devices • Coolers • Stripping Tables • Stainless Steel and Plastic Sinks • Negative Dryers • Special Equipment for Photoengraving



MASTER SALES & SERVICE CORP., Wyncote, Pennsylvania

For More Information Circle 113 on Reader Service Card

are you melting DOLLARS –or remelting metal?



Every time your man stoops to shovel dead metal into that obsolete furnace, you're burning dollars . . . dollars that not only will pay for a modern all-NOLAN installation, but bring a healthy return on your investment to boot! Isn't it time to discover how to cut *your* loading time up to 95% — *your* over-all remelting costs 50%? MAIL COUPON TODAY FOR THE FULL STORY.

TYPICAL ALL-NOLAN SMALL NEWSPAPER INSTALLATIONS
1-TON FURNACE (right) — gas or electric heat, space saving design, big furnace features — at small furnace price. Pictured with accessory NOLAN double-four ingot mold.

NOLAN "MELT-LIFT" (above) — loads 400 pounds of metal in 30 seconds — with just the push of a button!

KEEP ROLLIN'
BUY NOLAN

NOLAN CORPORATION

Department PP-1 Rome, New York

O.K. . . . give us the full story on the NOLAN remelt furnace and "Melt-Lift" automatic loader.

NAME.....

COMPANY.....

ADDRESS.....

.....

For More Information Circle 197 on Reader Service Card

HELPFUL LITERATURE

FOLDERS · Sales Aids · Instruction Sheets · BULLETINS · Catalogs · BOOKLETS · Brochures

Circle Numbers on Reader Service Card in This Issue

Keep Yourself Informed. The folders and bulletins listed below all pertain to modern equipment, supplies, processes and/or methods. These have been prepared especially for plant managers, superintendents and foremen. Please circle the numbers on the Reader Service Card in this issue for the bulletins you wish to receive. Drop the self-addressed card in the mail. PRINTING PRODUCTION will forward your request.

Composing Room

TYPE FOR TAPE AND MANUAL USES

A specimen folder introducing StarNews, a type face for tape and manual operation designed for narrow column widths, has been issued by Star Parts, Inc. Details of StarNews with bold face and StarNews with Gothic linecomposing machine matrices are included in the folder. Circle No. 308 on Reader Service Card.

RCA ELECTRO TYPE SETTERS

A descriptive brochure on the RCA Electro Type Setter has been issued by Radio Corporation of America. It is claimed that linecasting machines equipped with the tape-operated RCA unit set up to 540 characters per min. Circle No. 335 on Reader Service Card.

LAMINATED PLASTIC BASE

Midwest Publishers Supply Co. is offering information on and samples of reZion laminated plastic base for use with newspaper plates or proof press bases. Circle No. 340 on Reader Service Card.

PERFORATOR TAPE FOR TYPESETTING

Samples of Perfection perforator tape for typesetting are available from Paper Manufacturers Co. Accompanying the samples is an informative booklet describing the features of the tape. Circle No. 313 on Reader Service Card.

MATRIX CONTRAST COLOR SERVICE

A brochure explaining the operation of the Matrix Contrast Color-coding system has been made available by Matrix Contrast Corp. The system is said to eliminate wrong font mistakes and reduce composition errors and transpositions. Circle No. 339 on Reader Service Card.

FAIRCHILD TELETYPESETTER

More Type in Less Time is the title of the 24 page booklet published by Fairchild Graphic Equipment, Div. of Fairchild Camera and Instrument Corp. Featured in the booklet is the Fairchild TTS teletypesetter. Circle No. 315 on Reader Service Card.

Platemaking

POWDERLESS FLOW-TYPE ETCHER

The Model FE-18 powderless flow-type etcher is the subject of an illustrated folder issued by Dirats Photo-Plate Co. The machine has a bath size ranging from 4 gal. to 8 gal. and will etch flats up to 18 in. diagonal. Circle No. 320 on Reader Service Card.

FILTER CONTROL OF SCREEN POSITIVES

A new Graphic Arts technique which is said to yield production quality halftone positives from inexact separation negatives is described in a pamphlet published by Eastman Kodak Co. Entitled, *Filter Control of Screen Positives Made with the Kodak Magenta Contact Screen*, No. Q-105, the eight page pamphlet is punched for insertion in the Kodak Graphic Arts Handbook. Circle No. 327 on Reader Service Card.

GOSS FLAT AND PLATE ROUTERS

Circulars illustrating the Goss fully enclosed 55G Rout-O-Plate and the Goss 68F flat router have been released by Goss Company, Div. of Miehle-Goss-Dexter, Inc. Specifications of both machines are listed. Circle No. 326 on Reader Service Card.

LITHO EQUIPMENT CATALOG

A catalog listing the Hamilton line of equipment for lithographers has been compiled by Hamilton Manufacturing Co. Among the equipment included in the catalog are layout tables, dot etching tables, deep etch tables and plate developing sinks. Circle No. 329 on Reader Service Card.

CONTINUOUS REGISTER CONTROLS

A brochure in which is described the operating procedure of redesigned Carlson Spacemaster register controls has been offered by Chesley F. Carlson Co. The Spacemaster prepunches copy, films, masks and plates. Utilizing Carlson register pins, the system is said to maintain control within 0.001 in. accuracy. Circle No. 316 on Reader Service Card.

Pressroom

LIQUA-SPRA NON-OFFSET UNIT

Six models of Liqua-Spra non-offset units for printing presses are illustrated and described in a brochure issued by American Type Founder Co., Inc. The units are designed to prevent offset. Circle No. 312 on Reader Service Card.

MEAD PRINTING SALES PROSPECTOR

The Mead Corporation has made available a new edition of *Printing Sales Prospector*, a chart which lists the printing needs that a business organization is likely to encounter each month. Also included are sections covering special sales opportunities resulting from developments and changes in a company and suggestions for saving by printing items that naturally go together. Circle No. 337 on Reader Service Card.

TWO COLOR JOB PRESSES

Information on its line of two color job presses has been prepared by Heidelberg Eastern, Inc. The presses are designed on a combined rotary-flatbed basis and are manufactured 15 in. by 20½ in. and 21 in. by 28 in. in sheet sizes. Circle No. 308 on Reader Service Card.

BLANKET AND DRAWSHEET SAMPLES

A folder of blanket and drawsheet samples has been prepared by Tingue, Brown & Co. Use of the blanket is said to result in reduced offset and less ink accumulation. Circle No. 332 on Reader Service Card.

CLEANER FOR PLATES AND PAPER STOCK

A paper cleaner for sheet fed and webfed letterpress, offset, gravure and flexographic presses is the subject of literature made available by J. E. Doyle Co. The cleaner is said to remove offset spray, paper dust and other loose material. Circle No. 331 on Reader Service Card.

LINK-BELT CHAIN DRIVES

The silent chain drive and the roller chain drive are described in literature prepared by Link-Belt Company. The silent chain drive is said to assure slipproof performance on high-speed presses; the roller chain is shotpeened to withstand impact. Circle No. 334 on Reader Service Card.

SMALL PRESS FEED GUIDE ACCESSORY

Hampton Processes, Inc., has released a folder describing the Ostwald Flexiguide, an accessory for the feed guide of small presses. The Flexiguide will hold any stock from 7⅛ in. to 17 in. long and has precautionary features that are said to reduce paper waste and permit closer quality control. Circle No. 322 on Reader Service Card.

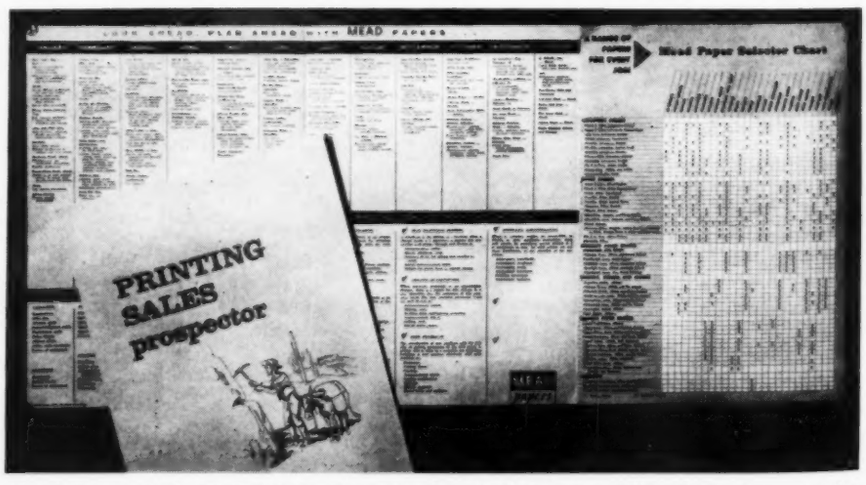
CONTINUOUS FORMS PRESS

Information on its continuous forms press has been made available by Brandtjen & Kluge, Inc. The press, it is said, prints any of the edge-punched business forms, zig-zag folded, from 2½ in. to 19 in. wide and from 3 in. to 18 in. in advancement. Circle No. 314 on Reader Service Card.

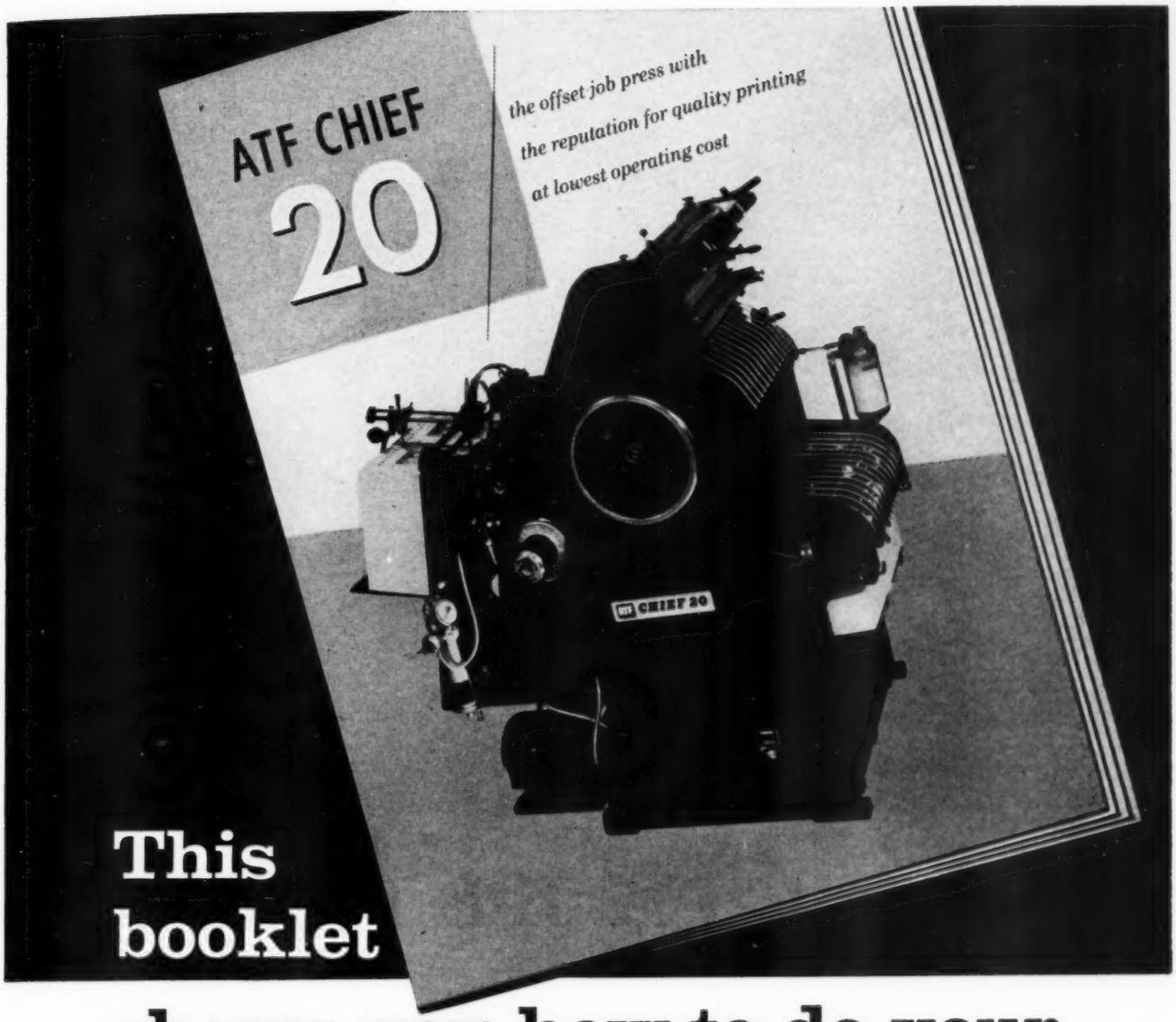
REWINDER WITH POWERED FEED ROLLS

The Doven two drum rewinder with powered feed rolls is the subject of literature prepared by Doven Division, Appleton Machine Co. The rewinder handles web sizes from 36 in. to 72 in. and takes parent rolls to 40 in. diam. Circle No. 330 on Reader Service Card.

(Continued on Page 84)

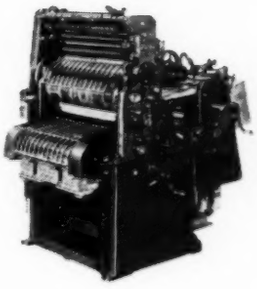


Mead Corporation's Printing Sales Prospector chart is designed to help printers increase sales.



shows you how to do your OFFSET PRINTING easily...quickly...economically...

As this ATF Chief 20 booklet shows you, no other offset press in its size range can match the Chief 20 for simplicity of operation...or beat it for dependable operation on so many types of jobs. You'll like its quick lock-up...fast plate change... and other time-cutting features. Send for the illustrated ATF Chief 20 booklet.



ATF

MAIL TODAY for your free copy

American Type Founders

200 Elmora Avenue ATF Elizabeth, New Jersey

Please send me a copy of the illustrated booklet describing the advantages and economies of the ATF Chief 20.

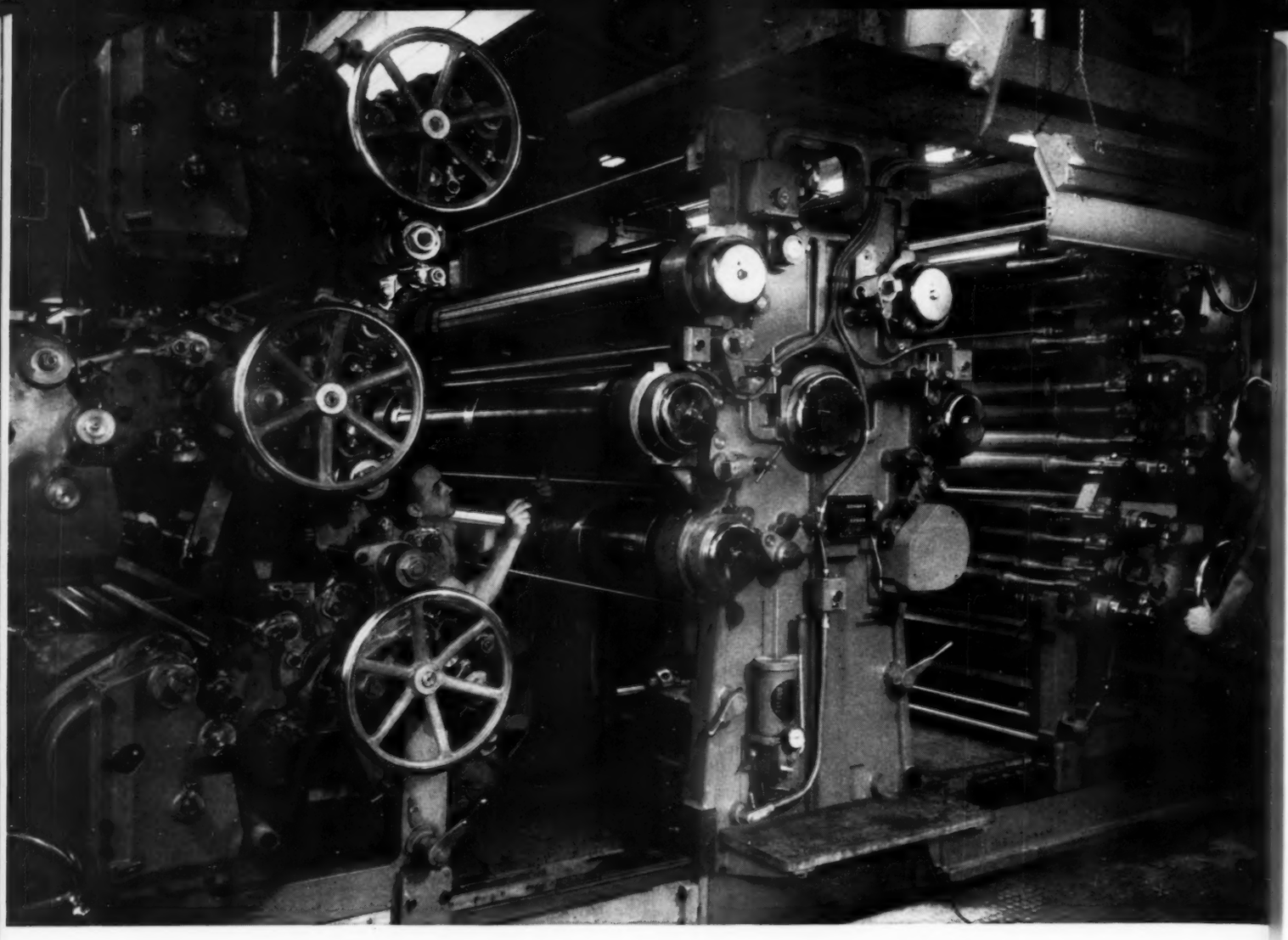
NAME_____ TITLE_____

COMPANY_____

STREET_____

CITY_____ STATE_____

For More Information Circle 10 on Reader Service Card



Starting point for your cost-cutting program

Dayco Tru-Tac® Rollers last 3 to 4 times longer in high-speed service

To meet today's hot competition, production managers and pressroom foremen are learning that with Dayco Tru-Tac Rollers, they can reduce roller replacement costs 80%, through longer service life, and visibly improve printing quality. Here's why:

1. Dayco Tru-Tac Rollers are made from a NEW synthetic compound that outlasts other roller materials 4 to 1. They are unaffected by heat, humidity or cold and have an amazing resistance to abrasion. No seasonal change-over is necessary with Dayco Rollers. They maintain exact diameter, perfect tack and proper firmness under all press conditions.

2. Quality improves immediately with new Dayco Tru-Tac Rollers. They distribute ink with unequalled accuracy and uniformity, regardless of press speeds, for millions of impressions.

3. Wash-up time is cut in half because of the low oil absorption qualities of Dayco Rollers. Very little effort is necessary to eliminate bleed back completely, even when changing from black to yellow.

4. Replacement costs are substantially reduced. When Dayco Rollers show signs of wear (eventually, even Dayco Rollers do) their surface can be "Re-Daycoed" at a fraction of the cost for new rollers.

®Registered T.M., The Dayton Rubber Company ©D.R. 1960

Find out how your plant can cut costs and improve quality with Dayco Rollers. Write today to: **DAYCO DEPARTMENT,**

Dayton Industrial Products Co.

Melrose Park, Ill. *A Division of The Dayton Rubber Co.*

West Coast Distributors: Farwest Ink Co., Seattle, Washington; Walter W. Lawrence Co., Inc., Los Angeles; George W. Shively Co., San Francisco.

In Canada: The Dayton Rubber Co., Ltd., Toronto.

"THERE'S A DAYCO ROLLER FOR EVERY PRINTING NEED!"

For More Information Circle 48 on Reader Service Card

PRINTING PRODUCTION
JANUARY 1960

Some Daily Newspapers Have Broken Production Bottlenecks with

PACKLESS STEREO MATS

By MacD. SINCLAIR, *Consulting Editor,* PRINTING PRODUCTION

UNTIL recently, the daily newspaper stereotype process has been considered an art. Excellence of the plate has been dependent to a considerable extent upon the personal skill of the stereotyper who became rather adept at controlling closely the many variables occurring in molding mats and casting plates.

The stereotype process is about to emerge from its swaddling clothes. It is rapidly becoming a precisely controllable process. The metamorphosis is due jointly to research work conducted originally by the American Newspaper Publishers Assoc. Research Institute in cooperation with Kimberly-Clark Corp., and subsequently by the mat manufacturers, equipment makers and engineering minds in newspaper printing plants. The new stereotype methods and equipment now keep pace with other improved processes in the printing industry.

For many years, one of the major contributing causes of stereotype reproduction delinquency was that of progressively increased mat shrinkage after molding to secure smaller page size. Originally instituted by publishers to "save" newsprint, shrinkage dimensions for many years were increased progressively in an annual price race with the newsprint manufacturers. From a purely economic standpoint perhaps, the shrinkage idea may be sound, but from a processing standpoint it has cost newspaper publishers untold amounts of money.

When these maximum shrinkages were employed, technical and mechanical troubles entered into the good reproduction factor. With high shrinkages, image distortion took place, and excessive variables in the printing surface of the plate persisted. In color process work, it appeared that accurate register of the plates was impossible to secure.

Major Advance in Offing

Major advance in newspaper printing technology is in the immediate offing. This consists of the so-called packless stereotype mat from which curved page plates are cast after the mat has been molded.

At the Minneapolis (Minn.) *Star & Tribune*, Stereotype Foreman George Stowowy (left) shows James Woodbury, production engineer, how a newsprint sheet is used as a sealer for the molded packless mat in Sta-Hi former to insure good seal to the former's vacuum plate.

Major objective of the packless mat manufacturers is to provide a mat which will not need hand packing after molding.

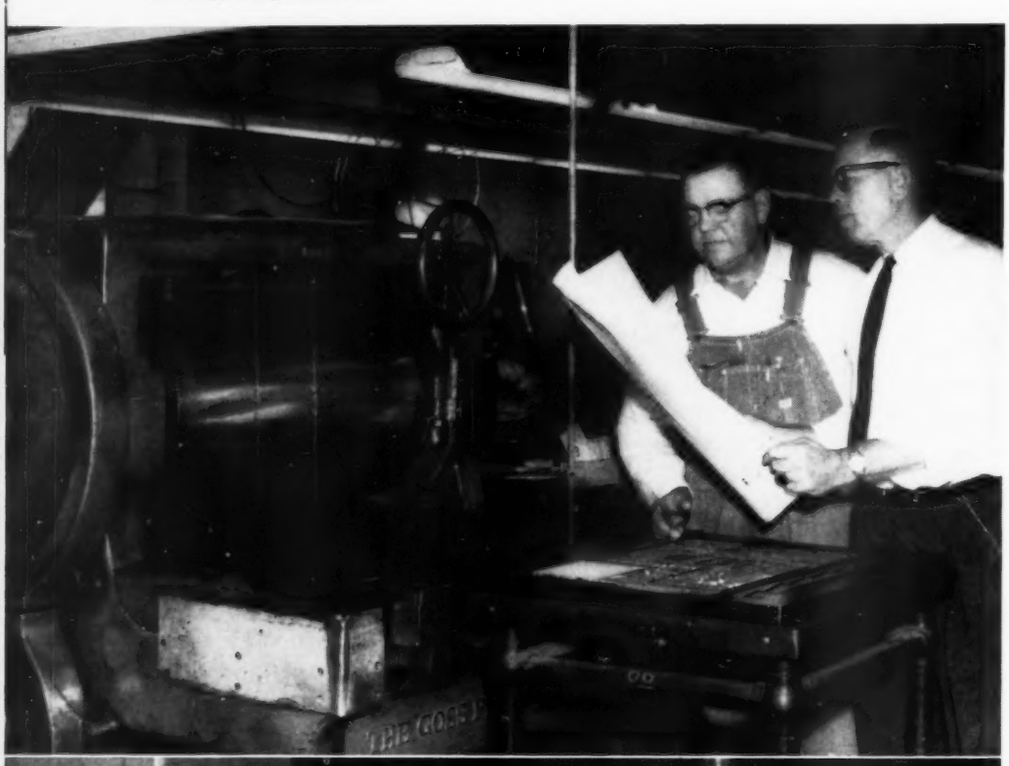
Hand packing has been necessary in the standard mat so the non-image areas will retain molded depth during the forming, drying and casting operations. In this way, inking rollers in a properly conditioned press will not bottom in the non-printing areas. If the rollers do bottom in these areas, a smudgy looking defacement will be printed in the paper. In this case, some of the ink from the rollers is deposited in the open areas and in turn will be transferred from the open area to the printed sheet on the press. In general, however, newspapers printed from plates cast from hand packed mats have been free from smudging.

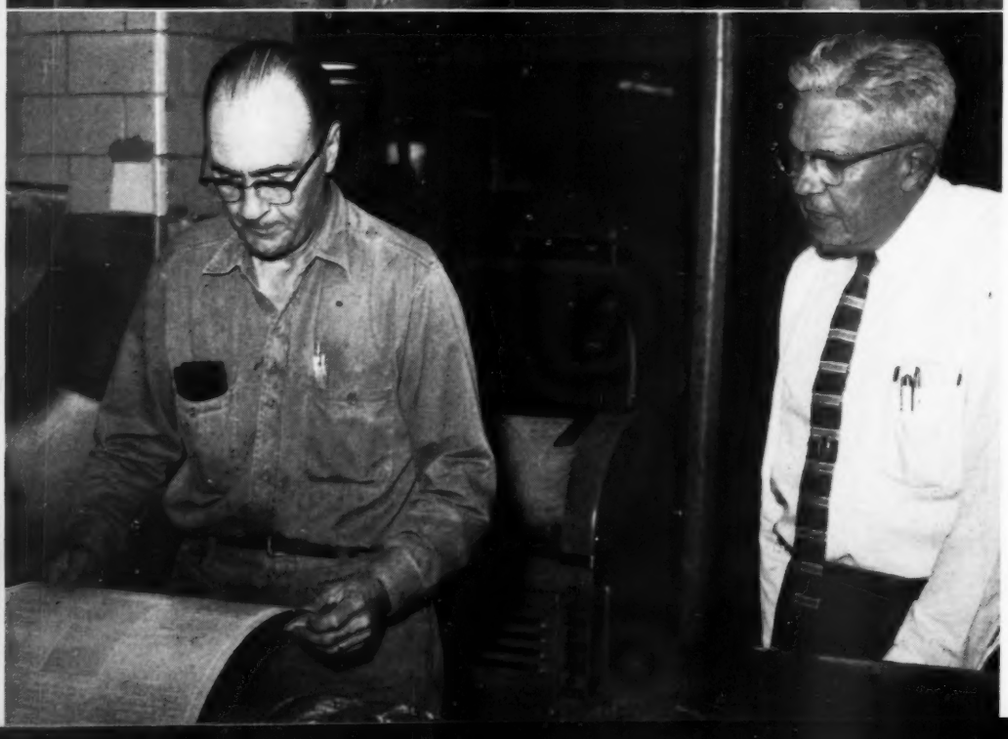
It now appears that newspaper stereotyping, generally speaking, is coming under the direct influences of chemists and engineers. Possibilities of the packless mat are such that a number of newspaper plants are using them 100%, while a limited number make exception to use of the packless mat by processing other mats for color process work. There is still another group of newspapers (estimated at 100) who are using them occasionally "to get the feel" of processing in their plants.

This being the case, there doesn't seem to exist any real reason why publishers, and *all* mechanical department executives in general should not cooperate in every way in solving problems arising when packless mats are introduced into their daily operation.

"We have been using packless mats since June 1957 and we would never think of going back to dry mats," said Al Rosene (right, in upper picture) production manager, St. Paul (Minn.) *Dispatch* and *Pioneer Press*. At left is Charles West, stereotype foreman.

"We have been using packless mats for three years with over-all good performance," commented George Kunz, (lower picture) production manager, South Bend (Ind.) *Tribune*. With him (left) discussing the packless mat from which a plate has been cast, is Royal Rager, stereotype superintendent.





Skills Will Be Needed

Up until recently, stereotyping has been heavily reliant upon the individual skill of the stereotyper. With the introduction of the packless mat, his skill will continue to be needed. But it will be a different kind of skill. Having learned the intricacies of processing mats, his attention and judgement will be required in the highest degree. Research, through chemistry and engineering will have provided him a means for producing a better, more accurate product at less production cost.

From this standpoint, it is apparent newspapers in general eventually will welcome this history-making technical improvement.

As has been the case with a number of other technological improvements in the printing processes, newspaper management and production executives will find it necessary to recognize the major changes in stereotype plate production techniques. In history it is recorded that industry mechanization invariably succeeds manual operation. Cases in point in the printing industry are powderless etching, color separation, tape operation of linecomposing machines, central stereotype metal melting systems, higher production printing presses and mailroom mechanization. All these developments are dependent largely on elimination of hand operation for their efficiency.

From Art to Precise Operation

With respect to burgeoning use of the packless stereotype mat in daily newspapers it appears that

sufficient experience has now taken place to permit making some comment regarding its value in plant production.

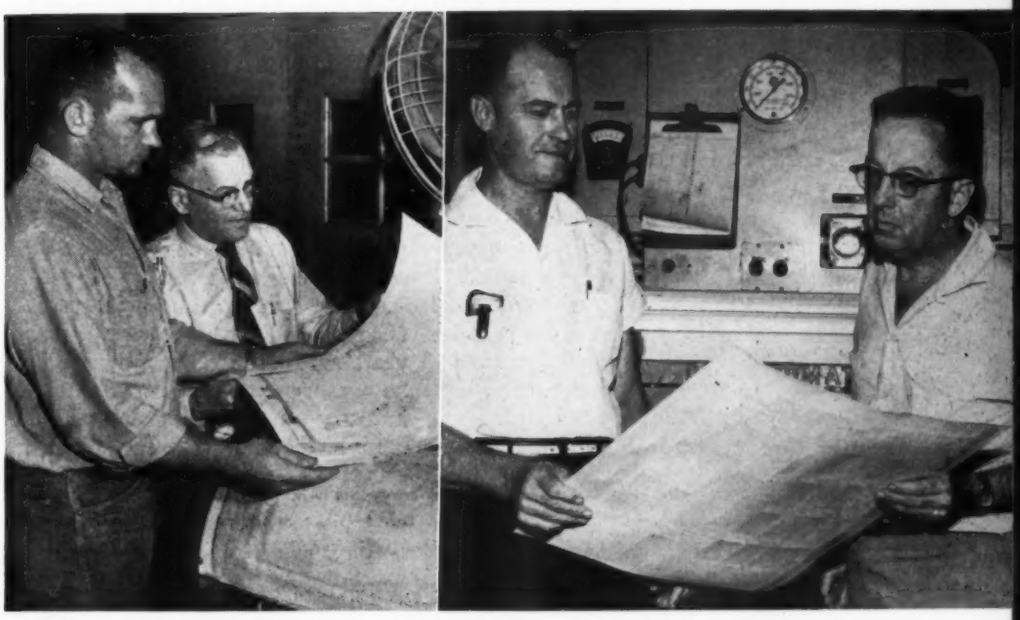
The stereotype process is the last of the major processes to be changed from an art to a precise operation. At the moment, its development might be compared to that period in the 1920s when the old wet mat was gradually becoming extinct because of increasing use of the so-called dry mat. Stereotype executives, of necessity, had to change their thinking about wet mat manipulation to conform to successful use of the dry mat. The composing room soon put all its type and linecasting machines into shape to produce solid slugs which would not crush under first molding pressure.

The mat manufacturers, equipment people, and instrument makers worked assiduously to develop their products to make it possible for the stereotyper to produce plates so the presses could turn out better printed papers at higher speeds. Meanwhile newspaper plant production costs kept going up. Originally, the ANPA Mechanical Dept., mainly in cooperation with Kimberly-Clark Corp., bent its energies in developing a two-piece packless mat. This consists of a standard mat backed up with a sheet of special plastic material. Upon molding and forming under heat, the two pieces have the property of being joined into one. The formed mat has a thermosetting property which permits placing it in the plate casting box without hand packing.

Stereotype Bottleneck

Major objective in development of the packless stereotype mat is to eliminate entirely the hand packing operation after the mat is molded. The hand packing operation consists of applying gummed felt-like strips opposite the nonprinting areas on the reverse side of the mat to furnish support in the plate casting box. Hand packing is an expensive manual operation. Anywhere from 3 min. to 5 min. may be consumed in properly hand packing the average page mat.

Hand packing mats can slow up newspaper production extensively, especially if forms are bunched near press closing time. In this case, the stereotype force gives undivided attention to the molding, drying, packing, casting and plate finishing operations. In most plants this period shortly before press time is called the stereo production bottleneck.



"We favor ½ in. shrinkage in packless mats for better results," is the comment of Earl E. Anderson (right in left picture) production manager, Rockford (Ill.) *Morning Star* and *Register-Republic*. At left is Jack Elston, stereotype general foreman.

"After more than two years use we'd find it difficult to return to hand packing," remarked Chapman Turner (right in picture at right) production manager, Atlanta (Ga.) *Journal* and *Constitution*. With him is Roy Vickery, stereotype superintendent. Page forms for both papers are molded from packless mats.

Packless Mat Benefits

Objectives in the use of packless mats might be summarized as follows: (1) Elimination of the slow manual hand packing operation; (2) Ability to bunch forms at press closing time; (3) Permit editorial to use additional time to get in late news copy; (4) Permit more flexible assignment of stereotypers to other duties; (5) Reasonable rearrangement, and in some cases, reduction in the working force.

Whether or not all of these objectives will be realized in all newspaper plants is problematical at the moment. However, there is every reason to believe they will be realized as time passes. Production benefits will be realized in proportion to the volume of pages required in the average daily newspaper plant.

PACKLESS STEREO MAT MAKERS AND BRAND NAMES

Burgess Cellulose Co.	
One-piece mat	No-Pac
Kimberly-Clark Corp.	
Backing for standard mat	Mat-Pak
New Products Div., Beveridge Paper Co.	
One-piece mat	Auto-Pack
Stereotex Co., The	
Backing for standard mat	Monopack
Tenak Products Co.	
Backing for standard mat	Tenanews
Wood Flong Corp.	
One-piece mat	Super Flong (replaces Master Flong)

Packless Mat Shrinkages

Properties of the packless mat are that after molding and forming (drying) under heat, it will hold its molded depth without necessity for applying packing strips by hand on the back of the mat as is done with conventional mats. It is formulated at the mill in such a way that its formed (molded) shape under heat is automatically held through the plate casting operation without hand packing support.

The packless mat accommodates the present demand for shrinkage qualities. However, this property does not seem to be as extensive as with the so-called standard mat. Maximum shrinkages up to 1¼ in. probably will have to be discarded. In the opinion of a number of newspaper executives, the maximum practical shrinkage which permits good reproduction is ⅞ in. Ferd

Mier, Detroit *Free Press*, reports that "Due to the inherent relationship between mat compression and content, shrinkages above 13/16 in. seem undesirable from an operational standpoint with one-piece packless mats. In using the backing sheet with a standard mat conditioned for more than 13/16 in. shrinkage, the backing sheet does not shrink as rapidly as does the mat and low spots and poor quality result. As the moisture content increases, the compressed thickness of the finished mat likewise increases and intensifies the problem of handling and securing good reproduction." Interesting comment about higher shrinkages!

Form Element Heights

Years ago, precision minded Lex Claybourn advanced the idea that a commercial curved letterpress printing plate should be made with exactly even image surface for printing on precision rotary presses. (Claybourn passed away several years ago. During his active period, he was recognized throughout the industry as possessing one of the most brilliant engineering minds in the press manufacturing field and later as a printing plant operator. His precision ideas still permeate the industry.)

Claybourn's idea was that with rigid press members and hard packing, true rolling contact of plate and tympan would result. In this way it would not be necessary to raise solids in the plates nor to fabricate the plates so the lighter tones in the plates would not be impressed excessively against the paper stock.

The theory made sense as an ideal where all form, plate and press members could be maintained on an inflexibly accurate basis. This ideal condition in general, however, has not been attained fully because of inability (perhaps impracticability) of maintaining it in commercial printing plant mechanical practice.

In direct contrast to Claybourn's theory, as applied to newspaper printing, is the idea advanced by Ferd Mier, assistant mechanical superintendent, Detroit *Free Press*, that a newspaper page form should be prepared especially to suit the peculiar requirements of stereotype molding pressure. That is, the heights of the form elements should be varied intentionally.

Unlike Claybourn's theory, it would not be possible to work with constant height form elements in newspaper reproduction. The variables introduced in flexible mechanical molding are deliberate.

Mier advocates that type matter should not exceed +0.001 in. over type high; column rules should be 0.916 in. high; halftone height not to exceed 0.923 in.

Practically all of the executives queried by PRINTING PRODUCTION more or less are in agreement with Mier regarding variable form element heights.

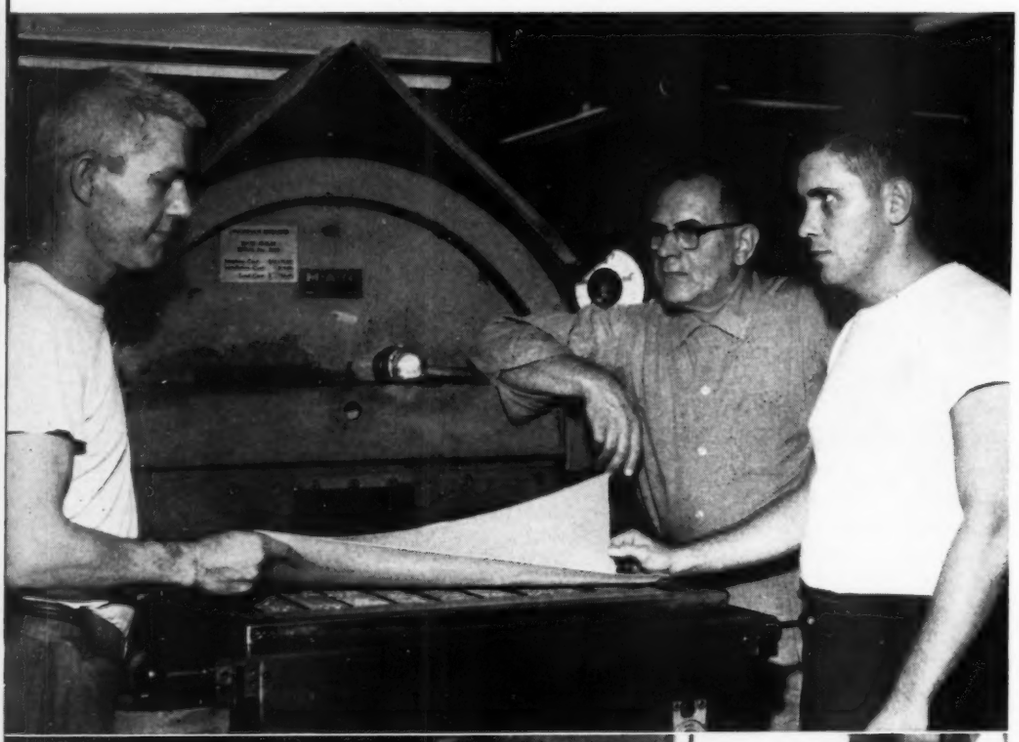
For many years commercial letterpress printers have been attempting to provide the pressroom with premadeready forms and/or plates. All of this has been brought about by the necessity for reducing press makeready time and the advantage offset printers have had in getting presses rolling by virtue of a one-piece form.

It would seem that for important production cost and edition time limit reasons newspapers will have to adopt new ways to make printing

(*Continued on Page* 81)

"We have been using the packless mat for three years with high degree of success," reports H. D. Rindsberg, Cincinnati (O.) *Enquirer*. Left to right in upper picture are R. Kettler; George Hauer, sr., stereotype foreman, and George Hauer, jr.

"We have been using packless mats since August 1958," stated Production Mgr. A. R. Mervick (left, in lower picture) Los Angeles *Examiner* and the *Herald-Express*. Examining the molded packless mat with Mervick is Ralph Prichett, stereotype superintendent.



Looking for Litho Plant

HAZARDS

. . . be aware of the dangers which lurk in platemaking and pressroom operations.

By **WALTER R. SMITH**, *R. R. Donnelly & Sons Co., Chicago**

THE problem of safety in a lithographic plant can be divided into two parts: safety in the preliminary or platemaking department and safety in the pressroom.

Lithographic platemaking requires the extensive use of acids and solvents. As a result, there is danger of one of the most serious occupational diseases—dermatitis. In general, the substances which cause dermatitis fall into two groups: irritants and sensitizers.

Irritants are substances, such as strong soaps and acids, which will disturb almost anyone's skin. They are known as primary skin irritants and include alkali, petroleum products, solvents, chromic acid and chromates, acids, resins, physical agents and biological agents.

Irritants burn the skin or cause it to dry out, crack or peel. The result is that the protective covering of the skin is broken, causing an inflammatory reaction which is painful and may cause itching, weeping or scaling and possibly infection. With proper care, such injuries can be avoided.

Sensitizers, when weak, usually affect only the relatively few people who are hypersensitive to them. Some materials which, when strong, are direct irritants to everyone and, when weak or diluted, affect only the few with especially sensitive skin are: keratin solvents, fat and cholestrol solvents, dehydraters, oxidizers, reducers and keratolytics, and keratigenic compounds.

*From information furnished by the Printing and Publishing Section of the National Safety Council.

Proper preventive measures will go a long way in protecting employees from bad effects produced by improper handling of harmful substances. Here are instructions which should be explained and enforced:

(1) Do not get irritants and sensitizers on your skin.

(2) Use funnels to avoid spilling.

(3) Do not splatter the outside of bottles and containers with materials, especially the chromates.

(4) Use rubber gloves, protective sleeves and aprons. Be sure protective equipment is in good condition.

(5) Use creams repeatedly during the working period to prevent chapping and cracking of the skin.

Harmful fumes may form when formic acid, collodium, collodium thinner, benzol or zylol are used. In that case, an approved ventilating system is essential.

Extreme care must be used in handling glass plates because the slightest imperfection may cause a break. It is wise to round off corners and edges with an emery stone to prevent cuts and scratches. The glass washer should wear rubber gloves, sleeve protectors, apron and goggles while washing plates with lye and nitric acid or other irritants.

Pressroom Accidents

Accidents in the pressroom usually involve machinery, the handling of materials, or poor housekeeping.

On the press, pinch points present a serious hazard. Fingers may be caught between the plate cylinder and the blanket cylinder or between the press rollers. All pinch points should have finger guards. Mesh guards should cover the rollers to prevent an accidental fall into the rollers. The switch should be off when rollers are being removed to be sure the press does not accidentally start. After washing up the press, some workers may try to see if the rollers are dry by feeling them while the press is running. This practice is dangerous and has caused serious accidents.

The delivery system is another danger point on the press. The delivery mechanism should be enclosed with wire mesh to prevent the catching of fingers, hands, arms, or clothing. If sheets become choked up in delivery, the press should be shut down and the safe button pressed before an attempt is made to remove the chokeup. No one should grab sheets from a running press.

Acids and solvents are also needed in pressroom operations, requiring the same precautions as in platemaking. In addition, acids and solvents should be kept in fireproof containers.

Spilling has caused serious fires. When a solvent used to wash cylinders is spilled on a control station, a bad fire may result. For that reason it is wise to use vapor-proof bulbs and covers on lights. Also, covers should be placed over control stations to prevent solvents from getting into the wires.

Safe Plate Handling

Workers should be given thorough instructions in the handling of plates. The sharp edges can cause cuts which may develop into serious infections if they are not given immediate medical attention.

A worker must know how to handle platforms and skids safely and easily. If he does not know how, he can hurt himself badly. Here, proper training is the best guard against accidents.

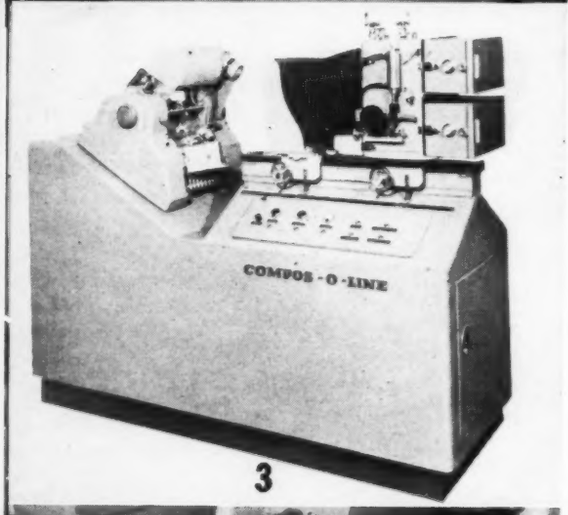
In jogging and inspecting, the most common injury is back strain. Proper training teaches workers how to lift—how to bend their legs instead of their backs when raising loads of stock.

Poor housekeeping is probably the most frequent cause of accidents.

Falls, stumbles, fires and many

(*Continued on Page* 50)

Rapid Method for Producing Catalogs and Directories



DIVERSE reproduction of data from source information and rapid and diverse communication of that information is being done by Compos-O-List Systems, Inc., in Washington, D. C.

The process for converting information stored on electronic accounting machine cards into printed form is based upon the use of the recently developed Compos-O-Line sequential card camera by Lithoid, Incorporated.

The Compos-O-Line camera takes information from the cards and delivers it in page or galley form on either negative film for stripping onto flats for offset platemaking, or as either a negative or positive reproduction on paper. The equipment, it is reported, can be operated at speeds up to 7200 horizontal lines of straight or tabular matter per hr. (See PRINTING PRODUCTION, Oct. 1959, page 53).

Compos-O-List Systems, Inc., currently is using the process for supply catalogs, radio station directories, parts and instruction manuals, telephone directories, industrial personnel lists, club lists, and various lists for the U. S. Navy, plus a variety of classified material.

Production Principles Explained

To show how the system works, a job through production and use is described. This job involves the roster of incoming cadets at the U. S. Naval Academy. Upon admission, each new cadet is handed an IBM card, at the top of which has been typed the cadet's full name, his laundry number (which acts as a control number for all his activities) his class and code. The card also contains a series of pre-printed questions concerning age, height, athletic activity, parents' occupation, religion and the like. After filling out, the cards are IBM punched for selective sorting.

The mass of information contained on the cards is available and easily retrieved, using sorters and other punch card system equipment. The use of this system solves the problem of dissemination of the information to suit specific needs of the various school departments. For example, the Dean's office required a full alphabetical list of individuals in the Academy; the laundry required a list in laundry number sequence; the chaplain required a list by religious affiliation; the athletic department needed details of size and class assignment and other departments had need for still other specialized lists. Various forms were also required, for duty rosters, roll call, academic marking, payroll, etc.

Anyone familiar with punch card systems can readily see the difficulties and chance for error involved in sorting, especially in transcribing, the information by hand.

1—Original statistical information, as well as catalog and directory copy, may be typed on a standard typewriter, Varityper, imprinted from hot metal type, or the information can be hand written on electronic accounting machine cards for rapid automatic reproduction in the Compos-O-Line camera. After development, the negatives may be used for positive reproduction on paper, or can be stripped into flats for offset platemaking.

2—The IBM cards are pre-punched for sorting purposes when more than one kind of list is to be obtained from the card file.

3—Compos-O-Line sequential card camera automatically reproduces up to 7200 horizontal lines of straight or tabular matter per hr.

4—After darkroom development, the negatives are stripped onto flats from which plates are made for offset printing.

Proofreading Eliminated

The complete file of cards was delivered to the Compos-O-List organization, along with descriptions of the 20 specific lists and forms required. The first step was to run the cards through an IBM sorter to establish an alphabetical sequence. At the same time blank cards of the same size were typed up with the necessary headings and divisions. These additional cards are now located in the proper position in the file. If spacing is required in the finished lists, blank cards are inserted where spacing is to occur.

After the file of cards has been prepared it is placed in an automatic paging device which establishes the number of headings, type lines and spaces required to make up each page or column galley.

The cards are then placed in the feed rack of the Compos-O-Line sequential card camera. The information contained on each card is transferred and recorded on a strip of sensitized roll film together with proper headings and spacings. The film is then removed from the camera, developed and stripped into position as required by the format of each list or form. The stripped and opaqued negative is then ready to be used to produce offset plates for final reproduction. In the case of forms the camera is designed so that all required rules are placed automatically as a function of the camera, with no additional labor added to the processing of the finished negative.

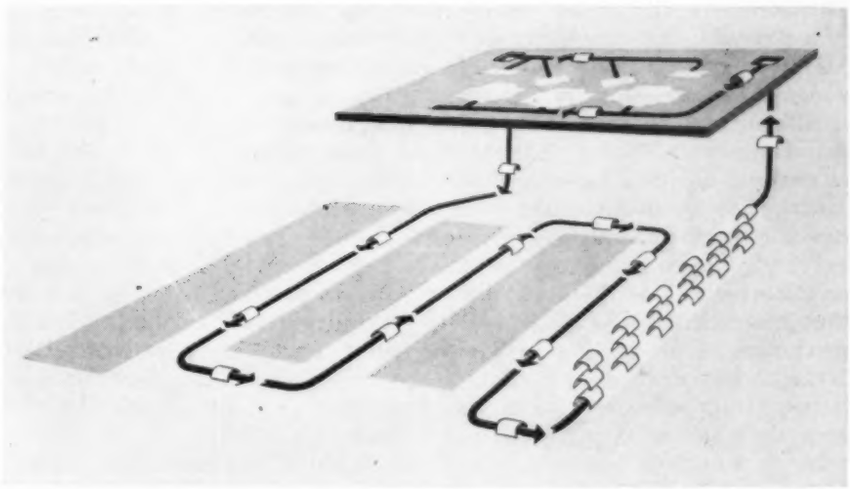
Card Sorter Goes to Work

Once the cards have been run through the Compos-O-Line camera, they are returned to the IBM sorter for re-arrangement according to the requirements of the next classification. The entire process described above is then repeated. On this particular job, 20 separate lists and forms were set up in negative form in less than 10 hrs. The original file is composed of a total of some 4000 cards.

In the event future additions or deletions from the list are required, it is a simple procedure to remove a single card or add cards without in any way affecting the balance of the system. Once the original card has been properly prepared and proof read, all rosters and lists made from the card must be accurate since the human factors of handling, retyping, rereading and reproofing have been eliminated.

Compos-O-List Systems, Inc. employs some 40 people, on two shifts. Plant facilities include 28 photographic and hot metal typesetting machines, IBM card sorters and punching and verifying machines and collators, a Compos-O-Line sequential card camera, automatic paging equipment, a darkroom and necessary light and stripping tables.

Capacity of the Washington, D. C., plant, is approx. 1000 pages per shift.



Schematic diagram of conveyor-elevator-storage system designed by the Goss Company Materials Handling Div. for the Kansas City *Star*. Plates are moved to and from the stereotype department two floors above pressroom by elevators. Dead plates are stored in the 10-high plate storage rack and automatically returned to the stereotype department as needed.

Stereo Plate Two-floor Handling System

A unique conveyor-elevator-storage system for stereotype plates has been designed by the Goss Company in association with Conveyor Systems Inc., for the Kansas City *Star*. The system consists of three parts: Elevators to raise and lower the plates, surface mounted conveyors on the press room floor, and a 10-high plate storage rack.

Frank McKinney, production manager of the *Star* outlined the system requirements based on the existing press and building layout, and the morning and evening operation of that company.

The stereotype department is located two floors above the press room. Three rows of presses have to be supplied. At times there are several hours between casting cycles, so a device is essential in which to store dead plates and to deliver them on demand to the stereotype department.

In the Goss System, the plates travel to and from the press room floor on elevators at the rate of about 15 per min. The press room floor is reinforced concrete, making any cutting of the floor impractical. So a shallow surface mounted conveyor system, utilizing fixed rollers which are driven from above, was selected.

The plates are taken from the conveyor for the press units. After the run, the plates are stripped from the press and placed on the conveyor. They then move to the storage rack, the capacity of which is approx. 600 dead plates. From the rack, plates move automatically to the elevator leading to the stereotype department. From the time plates are put on the conveyor until they are taken off in the stereotype department two floors above, this system is automatic.

In commenting on this system, L. R. Durant, assistant manager of Goss Materials Handling Div. stated: "The Kansas City *Star* system is an example of what can be done to improve production in existing plants."

Litho Trade Platemakers Formulate Trade Customs

Trade customs defining the relationship of trade platemakers with litho plants have been formulated by the Lithographic Platemakers Section, Lithographers and Printers National Assoc. Specific practices of the lithographic trade platemaking industry are outlined in nine provisions. Policies included in the customs are those covering orders; experimental work; specifications and color proofs estimates; alterations; responsibility for metal, negatives, positives or press plates; storage of customer property, and delays in delivery. Copies of the customs may be obtained by writing LPNA, 1025 Connecticut Ave., N. W., Washington 6, D. C.

PRIMARILY, this report will concern itself with the makeready for conventional curved electrotypes. Also mentioned will be makeready for rubber plates and the new wrap-around letterpress plates.

Although a number of methods and systems of makeready will be described, some of them cannot be covered in detail because of space limitations.

Makeready for curved electrotypes can be divided into two parts: pre-proofing and pre-register.

Pre-proofing is a means of revealing and correcting any inaccuracies in the plates before they are put on the production press. Pre-proofing saves valuable press time which might otherwise be spent in underlaying or overlaying, or waiting for wholly unsatisfactory plates to be replaced by the electrotyper.

must wait while the sheet is pulled up on the press.

The first pre-register system for minimizing makeready to be explained is one with fairly universal application to either web or sheet-fed rotary presses.

To illustrate this system, consider pre-register for a 36 in. by 48 in. five color rotary letterpress with a common impression cylinder. The press has solid steel spirally grooved plate cylinders with heavy steel bearers, which provide maximum accuracy between plate and impression in the press itself.

The first major step is the preparation of a lineup sheet. The sheet is the key element in this type of universal lineup for commercial and packaging applications.

Making the lineup sheet involves laying out the

Rotary Letterpress

PRE-PRESS TECHNIQUES

An Explanation of the Makeready Systems

By S. C. SAUNDERS
*Vice President, The Cottrell Co.**

Pre-proofing operations include gauging the plate for correct and uniform thickness, and rough proofing to see where underlays may be needed to bring up low areas. The underlay spots of tissue are cemented onto the back of the electrotype. The plate is then proofed again until it prints uniformly over its entire area. Full underlay sheets are then cemented to the full back of the plate. These underlays are sometimes varied in thickness to raise or lower the impression, where proofing shows one or more plates in a set to be printing too light or too heavy to match progressive proofs.

Plate treatment is the term generally used to describe intentional and built-in variations from a perfectly level plate surface. This is probably one of the most controversial subjects in letterpress makeready. It is sufficient to say that since the treated curved electrotype was introduced by Milton McKee about 1908, it has been used with many variations.

Methods of plate treatment may vary from the hand cut overlay all the way to the mechanical processes developed by the Minnesota Mining & Mfg. Co. and Bishop-Stansell Co. However, whatever the type or degree of treatment, by whatever process, there seems no substitute for pre-proofing of plates before they are put to press. Certainly minimum makeready cannot be accomplished if printing pressure adjustments

*From an address delivered at the letterpress forum, sponsored by the New York Employing Printers Assoc., Nov. 12, 1959.

imposition on a sheet of paper, which can be transferred to the plate cylinders. In addition to guiding the location of plates, it is used as wrap-around underlay on the press, keeping cylinder and grooves clean as an added benefit.

The original imposition layout may be a pasteup, a rub-off from a die or a dimensioned drawing, etc. In any case, the imposition layout has the same area and spacing as the face of the curved electrotypes. This is the pitch line of the plate cylinder, and approximates the travel line or printing line. As lineup sheets are made to refer to dimensions on the plate cylinder surface, and as the backs of the plates which are usually 3/16 in. to ¼ in. thick, one must correct the imposition dimensions around the curve of the cylinder to allow for the smaller diameter under the plates. (On a 36 in. by 48 in. press the cylinder circumference is 39 in. at the pitch line, but at the surface undercut for 3/16 in. plates, it is just a fraction over 38 in.) A scale which is corrected for each cylinder diameter and one that can be compared to a pattern maker's shrink-rule, is necessary in performing this pre-press operation in the plant.

Making Multiple Lineup Sheets

This shrink-rule is attached to a lineup table. At right angles to it is mounted a standard inch scale for dimensions across the press. A set of underlay

sheets of correct size and thickness, (one for each color cylinder) is jogged and carefully fitted onto the lineup table, so that they fit both scales along the side and top of the sheets. The sheets are precut exactly to fit against gauge blocks on the plate cylinder. The blocks have been put on the plate cylinder in exact relation to the correct deadline, even if the present cylinders on the press are not accurate as to deadline or cylinder scribing. This allows a deadline mark to be put on the lineup sheet that is accurate in relation to all five plate cylinders. From this deadline, measurements are transferred from imposition layout or dummy onto the lineup sheet and marked as crosshair location marks. One set of crosshairs is laid out and marked for each plate in the imposition. In this manner, lineup sheet for the key color cylinder is preferred. Next, using a cutter wheel, the layout man carefully traces the lineup on the top sheet, cutting right down through all four or five lineup sheets, making an exact set, one for each cylinder.

Marking of Plates

Special equipment is required for marking of plates so that they may be placed on the press in proper position with respect to the lineup sheet. For this purpose a saddle fixture, made to the exact curvature of the plate cylinder for which the electrotypes are made, is used. The saddle fixture is equipped with plate lockup adjustable from the edges, and a hinged cover in which is mounted a transparent plastic sheet. First the key plate, usually the black, is mounted on the saddle and positioned in proper relationship to the crosshair marks on the lineup sheet, which are duplicated on the base of the saddle. The plate is then inked directly on its face with a brayer. The transparency is lowered into place on top of the plate and lightly rolled to offset the ink to the inside of the transparent sheet. This provides a key proof. The electrotype is then scribed on all four edges by a device built into the saddle, creating scribe lines for later alignment on the press.

Each subsequent color plate is placed on the saddle, the transparent proof dropped in place on top of it and brought into register visually by actuating the lockup from the external knobs. The cover is then raised and the scribe marks transferred to the edges of the electro. This is repeated until the full set is marked from the key proof.

Now the lineup sheets can be mounted on the press cylinders, aligned with the gauge blocks and secured with Scotch tape or other suitable means. The makeready crew can then start laying plates, using the scribe lines on the plates to match those on the lineup sheets. Because all measurements are on the lineup sheets, any plate can be placed on the cylinder without reference to any press at one time, and is one of the largest time saving factors in modern premakeready.

The strike-in proofs, when using such a system, are often amazing. They usually show near perfect register over the form, and cut registering time substantially. Some printers using this system, or variations of it, report cutting press

(*Continued on Page 58*)

Mails Papers in Bags Made of Film

Each copy of the Sunday edition of the New York *Times* bound for subscribers in California, Washington and Illinois is packaged in a bag of transparent polyethylene film.

Sealing and labeling of the papers is accomplished by specially-designed, automatic machinery. Eventually, the *Times* expects all of its 80,000 Sunday mail subscriptions to be similarly encased.

The material used is Visqueen polyethylene film, a product of the Plastics Div. of Visking Company, Div. of Union Carbide Corp.

The Carbert Manufacturing Co. collaborated with the *Times* on a unit that would automatically seal, trim and thermoplastically label the film containers as they move along a 40 ft conveyor belt. Presently two semi-automatic baggers are used to insert papers in the bags. Each bagger holds about 200 polyethylene "J" bags, so called because they have an extended lip. The bags, 14 in. by 19½ in., are opened automatically and the newspapers inserted by hand, after which the package is pushed onto the conveyor for sealing and labeling.

Reportedly, the bags are tough enough that they can be thrown about in postoffice sorting rooms without bursting or tearing. Copies arrive intact, unsoiled, without dog-ears and folded flat for easy reading.

Left: In New York *Sunday Times* mailing department, individual copies for mail subscribers in several far-states are inserted in polyethylene film bags. Semi-automatic bagging machines facilitate insertion by opening the bags with air blast, after which mechanical arms spread bag's mouth. Center: Passing along conveyor belt in the mailing room, bagged newspapers go through automatic heat sealing operation. Machine at end of conveyor applies subscriber address label to each copy. Right: Automatic labeling machine applies thermoplastic label to film bag, heats the label, then cuts it from previously prepared continuous strip. All this is done automatically.

● *Fifth of a series: Will Europe outstrip us in printing because of government participation in realistic research work*

GOVERNMENTS ENCOURAGE

Global Graphic

THERE appears to be widespread agreement that research and development are keys to the future. To printing industry leaders, however, this agreement applies more specifically to their belief that it is the supplier to whom research is most important. The common impression is that "the supplier has something to gain directly from research" and can recover the cost in the selling price of his product.

In discussions with these same industry leaders we have also found widespread agreement when we asked about the part to be played by government in industry research. They have been unanimous and outspoken about their insistence that "government" should have no part in a program of industry research and development, at least where the Graphic Arts industry is concerned.

Scientists in Government

This attitude toward government is understandable in view of the widespread criticism that has been heaped on some government projects during the past 30 years. The fact that government and its activities are influenced both by business and personal interests of citizens is not admitted. Neither is the fact that scientists and other professionally trained government workers are devoted to their job assignments to a degree not unlike the devotion of a school teacher. One seldom hears of scandals and waste among the technical and professional government employees. No group has greater respect than the Bureau of Standards which is composed largely of scientists and engineers.

Of course, the pressure for immediate profits is not present in government research. The lack of profit motive, however, has little to do with the desire and need for basic information from fundamental studies so badly needed in the Graphic Arts. There is little doubt that any research team attacking the problems of the Graphic Arts would yield results in a reasonable time. Business and other leaders too frequently generalize regarding the practices of government when they are responsible for its activities. It is not difficult to find instances where businesses themselves, sponsor practices having some characteristics of "government work."

These attitudes toward government participation in research prelude a discussion here of the attitudes and practices of the rest of the world, especially Europe. The United States is unique in its insistence on the sanctity of free enterprise, and yet our government is probably the biggest spender on research the world has ever seen. Our spending is related, however, to problems of national defense, agriculture, mining and health, and little attention is given to the individual industries not in these categories. We have not said, and will not say, that we think this is wrong, but we do wish that some study might be made of it.

Need Industry-wide Plan

There is no apparent plan of any kind for organized wide coverage research in the United States, where government would participate or encourage it. It is doubtful too, if any single industry has a comprehensive plan for industry research other than the defensive types of study carried on. This usually happens when an industry finds itself in trouble with government regulations or with competition from another industry.

There are a few illustrations of attempts to move in the direction of industry research, particularly in the Graphic Arts. Trade association organization charts frequently have a place for a research director, and several actually support technical studies.

One excellent example of this is the Folding Box Assoc. of America whose research director, William D. Hall, has sparked the support of a printability project at Lehigh University for several years. This is the type of study needed by the industry for its future progress, but it cannot be aimed at a specific goal of dollars tomorrow. It is giving fundamental information to the industry on which design for the future is based.

Perhaps the greatest satisfaction of my professional experiences in Graphic Arts work has been participation in the Intl. Conferences of Printing Research Institutes. This is where Graphic Arts research scientists from a dozen or more distant countries have come to discuss the studies and experiments in which they are engaged. The majority of the participants represent institutes in Europe or elsewhere where research is partially sponsored or encouraged by government agencies, but none is strictly a government activity. These groups receive their principal support from industry members and the aim of each program is related to improved Graphic Arts processes, machines or materials.

British Research Organization

An excellent example of industry approach to research in Graphic Arts is that of the Printing and Allied Trades Assoc. (PATRA) in England. PATRA's principal connection with government is through its participation in funds from the Dept. of Scientific and Industrial Research which supplies about one-third of the annual budget. This is

By MARVIN C. ROGERS, Ph.D.
Consultant, Flossmoor, Ill.

Arts Research

a kind of government-industry self-help plan because public funds will support PATRA only to the extent that members also contribute. It is not unlike the state and federal aid schemes used in schools and for public works in the United States.

There is little doubt that the impetus given to research and development by the government grant has done much to build up the strength of PATRA. The hard work of the research staff and the devoted efforts of British industry leaders through more than a quarter century has resulted in an industry membership of 815 firms, of which about 700 are in the Printing Division.

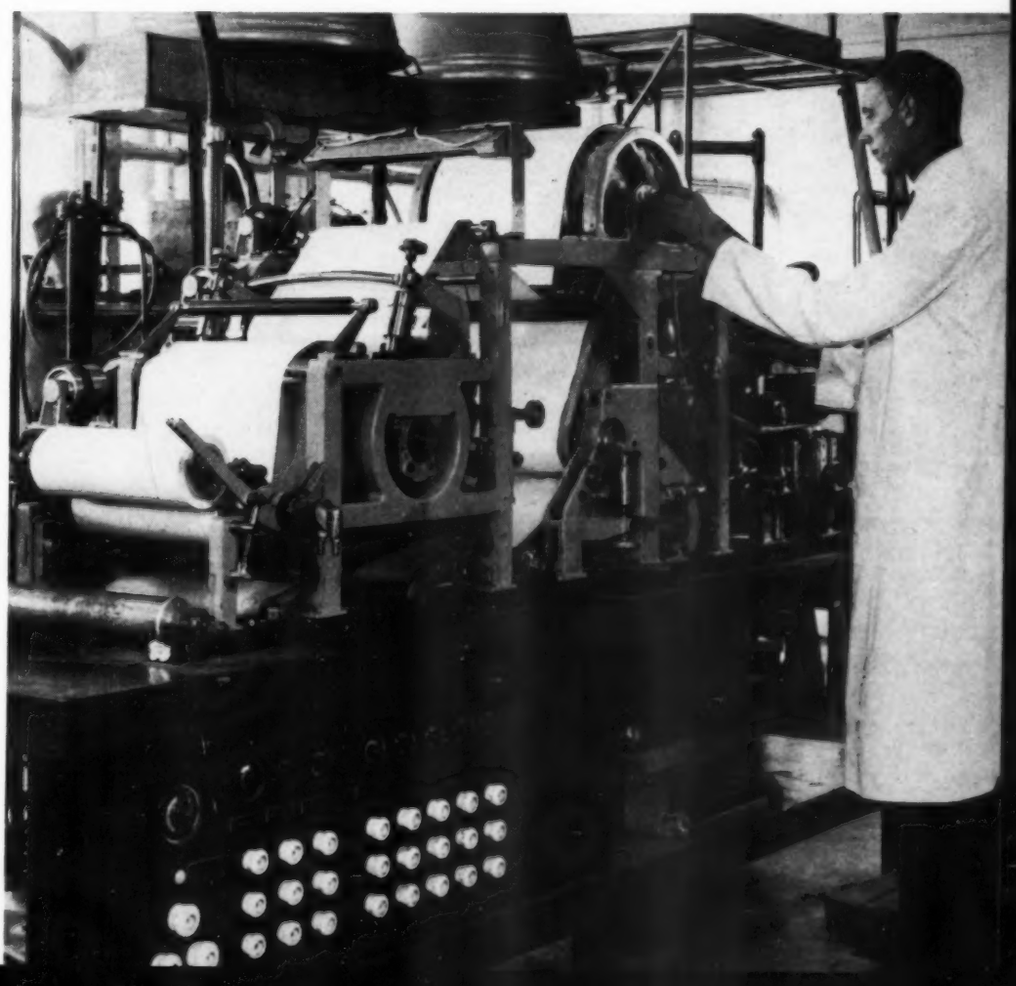
Membership is restricted to firms in Great Britain and the Dominions. In the Printing Division about half are suppliers of paper, equipment, ink and plates. It is interesting to note that even though the research program devotes no attention to gravure, such prominent gravure houses as Sun Printers, Bemrose and Sons, and Odhams are among the membership. Packaging members account for another 100 or more firms contributing to the work of PATRA. There are about 100 staff members under the direction of Dr. V. G. W. Harrison, whose activities encompass technical research, information services, and technical services to member firms.

Western European Activity

Great Britain is not alone in Graphic Arts research. Well established and well equipped laboratories can be found in Sweden and the Netherlands, where much of the research is coordinated through national research agencies. Western and Eastern Germany each sponsor separate agencies. In Norway and Finland, institutes not unlike our Institute of Paper Chemistry conduct programs designed to learn more about the qualities of pulp which make it best for printing papers. There are other countries too, like Switzerland, France, Italy, and the U.S.S.R. Most of the research programs are small by United States industry standards, but when one considers the physical size and populations of these small countries, it is remarkable that they will support fundamental activity not generally tolerated by the printing industry here.

The Swedish Graphic Arts Research Laboratory, under Gosta Carlsson, located in a modern Stockholm building adjacent to the Pulp and Paper Research Laboratory has done considerable basic work on printability of paper. This relatively basic study ties together the needs of printing with those properties of Swedish pulp in making it a good printing paper. Wood and pulp are important to the Swedish economy. The laboratory's work is not confined to printability either. Research on printing fundamentals is also being done.

Work in Norway and Finland laboratories is also primarily related to pulp and pulp properties. These countries are not major printing centers and their export economy depends on pulp from wood. Both countries have well equipped



Postwar Germany is showing signs of increased activity in the field of Graphic Arts research. Here an experimental paper converting machine is used at the Frankfurt, West Germany laboratories of Battelle Memorial Institute. Similar testing projects are being conducted in other European countries.

laboratories and staffs which have made the printing processes an important part of their work. Dr. Lars Nordman of Finland, for example, has developed world recognition for his work on pulp and its relation to the printing processes.

In Denmark research is well organized, but the approach is different. Newsprint users conduct their own work which is designed to raise the quality of the paper they use. They have also been interested in test methods designed to maintain quality. It is in the Graphic College of Denmark, however, where we find that training and research are partially combined. Research, which consumes a major part of C. W. Christensen's time, is concerned with practical industry problems. The staff is not large, but the fact that training and research in a special institute are considered by a small country as small as Denmark is a tribute to the Danish people.

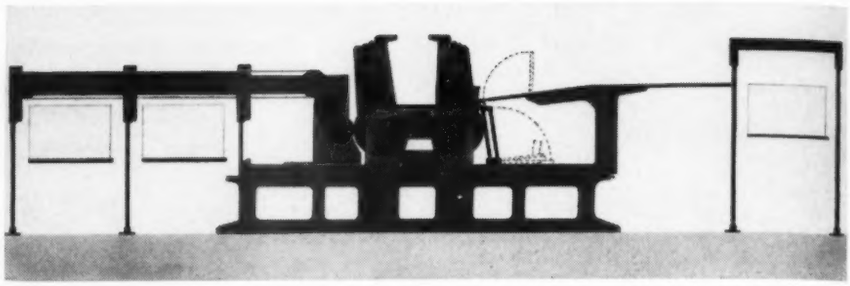
Germany in Forefront Again

The German tradition for research is so well known that it needs little amplification here. The German scientist historically has been dissatisfied with processes as they are and constantly has sought ways to bring about improvements.

Printing firms of Western Germany have a unique organization operating at Munich. The German Institute for Research in Graphic Arts gives the visitor the feeling that he is in the midst of a graphic science, rather than the Graphic Arts. Located in Bamberger Haus in Munich, it is a showplace as well as a scientific institute. The sponsoring group is made up of members of the printing industry in Germany, but the institute also gets some support from foreign organizations.

Under the leadership of Professor J. H. Albrecht, the German Institute has made comprehensive studies of printability, color reproduction, instrumentation, and platemaking processes. The Nylon plate demonstrated at the Seventh Educational Graphic Arts Exposition in New York was a development of FOGRA, as the institute is known. Another successful development has been the K-4 anti-offset powder which has found wide application

(*Continued on Page* 79)



Sheetfed rotary press converted from a flatbed press by Western Printing Machinery Co. Features of the press are a double delivery and the elimination of the reciprocating principle.

Two Color Flatbed Converted to Two Color Rotary Press

Western Printing Machinery Co. has converted a two color flatbed letterpress to a sheetfed rotary press and equipped it with a chain delivery that delivers sheets in two piles.

The press also has been equipped with an impression cylinder which is twice the size of the plate cylinder allowing the plates to be inked twice for each impression.

The flatbed motion is eliminated and a sheet is delivered for every revolution of the impression cylinder. This is contrasted to the two revolutions necessary to produce a sheet with the flatbed principle.

Utilizing a Miehle press frame, the two printing units are bolted above the impression cylinders. The press is said to be designed so that the chain delivery can be moved back 3 ft. in order to provide work space for makeready operations.

Other features of the converted press consist of facing fountains which may be serviced from one position, and ink trains containing three vibrator and three form rollers each.

Hard Dot Gravure Processes Examined

The Engineering Council of the Graphic Arts Industry, Inc. recently held the first of a series of seminars in Washington, D. C., dealing with hard dot gravure processes.

The production of hard dot positives, the effect of the resist film and etching were among the subjects discussed by the Council's Committee on Photomechanics and Platemaking. James M. Dugan, Battelle Memorial Institute, Columbus, O., served as chairman.

It was concluded that there are indications that a definite trend exists toward the use of hard dot techniques in the gravure printing of national publications. The gravure industry, in order to improve its control of quality and economy, is using the hard dot processes as a means for standardizing the making of positives, resist exposure techniques and etching procedures. The advantage of the three hard dot processes, Art Color, Hurletron and International-Wattier, is that the shadow dots are similar to conventional halftone dots while the screened image retains all the retouching done on the continuous tone positives.

Although the Art Color and International-Wattier hard dot processes use carbon tissue and Rotofilm as resists, the Hurletron utilizes only the Rotofilm. More information is needed in order to develop the hard dot procedures in the areas of etching reactions, resist penetration, spectral sensitivity and light reactions of carbon tissue and Rotofilm.

A need by the gravure industry for presses with greater flexibility in color printing was noted by the seminar participants who represented many gravure companies.

Gives Christmas Scholarship

A Christmas gift scholarship of $500 has been presented to the National Scholarship Trust Fund of the Education Council of the Graphic Arts Industry by Graphic Arts Equipment Co. According to Miss Elcy E. Schwarz, president of the company, the scholarship was donated in the names of those business associates whose policies dictate that no business gifts be accepted by themselves or their employees at Christmastime.

How Thirsty Air Robs You Of Valuable Production Time

PROBLEMS such as static, curled stock, imperfect register and similar difficulties can become a serious nuisance in a pressroom. With greater effort for quality and efficiency, more attention is being paid to these production problems. Studies by all concerned usually disclose that the basic cause is either the condition of the air; or a rapid change in the condition of the air where the paper is stored; or in the pressroom itself.

Pressmen are at the mercy of the material which they are converting. This applies to paper, chipboard, Kraft, cellophane, or similar fibrous materials. It is of utmost importance to know that because the paper is fibrous, it is repeatedly affected by the humidity conditions of surrounding air. This is the major reason for paper manufacturers using controlled humidification in their paper finish rooms, and for costly packaging prior to the shipment from the mill.

Ideal Amount of Moisture

Just as surely as steel expands when temperature increases, so will paper stretch when air humidity causes paper fibres to swell as they pick up more moisture. As a general rule, the ideal amount of this moisture for paper is somewhere between 5% and 6% by weight, and the internal moisture is reasonably stable when surrounding humidity is between 40% to 50%.

The change in relative humidity of about 15% will mean a change in internal moisture of about 1%. While this amount may seem small, if this change takes place over an hour's period, which could very well happen without humidification, the dimensions of the paper will change rapidly at the edges and the result is harmful curl.

Another problem that plagues printers is static. Static is caused by dry air. Many printers use electrical devices, tinsel and even chemical sprays in an attempt to eliminate the problem of static. All they receive, however, is some relief; for to solve the problem is to eliminate the cause—that being dry air and dry paper.

The information in this article is taken from the booklet, *The Importance of Humidification in the Graphic Arts*, issued by Walton Laboratories.

How Dry Air Occurs

Many printers feel that it must be the fellow down the street who has dry air, or that "I can easily get all the moisture I need in the air by wetting down the floor, opening windows, hanging pans on the backs of radiators, or loading a squirt gun with water and spraying the plant as I do roses at home." Therefore, it is important to learn how this dry air occurs in every artificially heated plant.

Think of air as a sponge—the bigger the sponge, the more water it will hold. The smaller it is, the less it will hold. We know that air as it is heated expands; therefore, cool air outdoors (small sponge) with lots of moisture, when brought indoors and heated, will expand (large sponge). The moisture that saturated the small sponge outside will only dampen the large sponge inside due to the larger amount of sponge through which the moisture must travel.

To be more scientific about this, let's say that there is considerable moisture in the outdoor air, enough to give a 90% relative humidity in a 32 deg. air. This small amount of moisture, when brought in with the same air, which is then heated to 75 deg., will give an indoor relative humidity of 20%; (the Sahara Desert averages 22%). This condition exists wherever the air is heated.

Opening windows, putting pans on radiators, using squirt guns, etc., cannot provide the proper requirements because this dry air needs approximately one gallon of water per hour added to it for every 10,000 cubic feet of area. Such inadequate methods as mentioned above cannot give this quantity of moisture which is needed for proper handling of paper.

Remember thirsty, dry air created by artificial heat is going to get the moisture it needs from somewhere; if not from an artificial source (humidification), then from the paper, cellophane, press rollers, furniture, and from the persons working in the plant. When this happens, trouble and problems start.

It has been repeatedly shown time and again, that by properly humidifying the air, production problems caused by improper conditions are eliminated. With the new high speed machines now being used it is more important than ever that the materials being put into these machines work properly. For these materials to work properly, their moisture content must be proper.

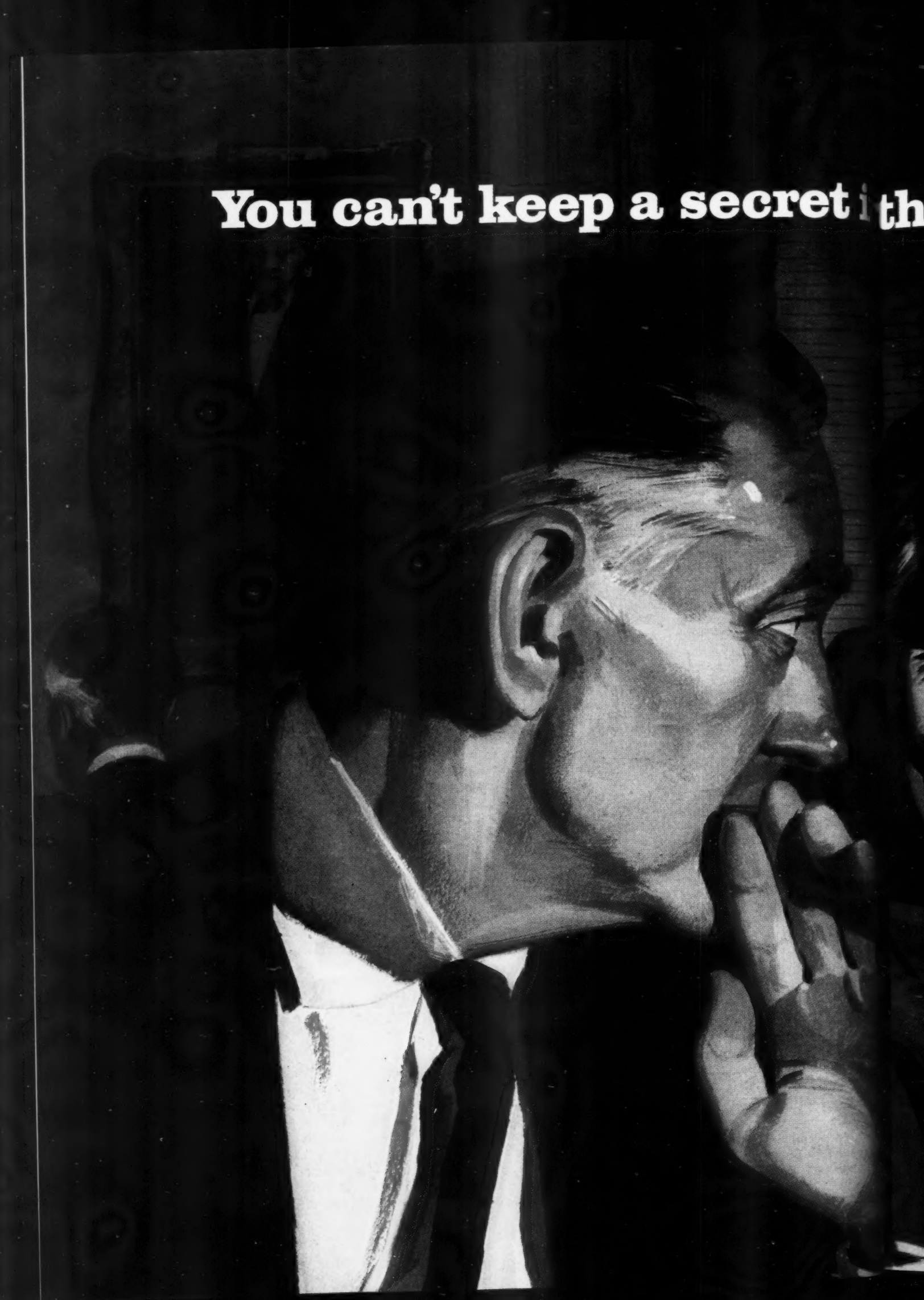
Many printers would not consider humidification to be of much actual use during the summer months. However, greater uses for a humidity system are found in the summer than in the winter. By using a humidity system to put a floor on the humidity variations which occur during the summer months, printers are able to control this problem which can cause serious production delays.

The table accompanying this story shows a comparison of a typical summer day outside, and the condition on the same day inside the plant with a system maintaining the relative humidity between 50-55%. You will notice that on one of the hottest days, humidification was needed most of the time.

CONDITIONS ON TYPICAL SUMMER DAY

	OUTDOORS		INDOORS	
Time	Temp.	Humidity	Temp.	Humidity
7 A.M. ..	81	65	81	65
8	80	58	80	65
9	81	62	82	65
10	88	46	86	64
11	91	43	92	55
12 Noon .	94	40	94	55
1	94	35	95	55
2	94	36	95	53
3	96	33	96	52
4	97	33	98	50
5	95	35	98	50
6	93	36	95	50
7	93	36	95	50

It is also important to recognize that in most climates of the United States, winter humidification is an aid to production more than six months of the year and this, coupled with the above mentioned summer operation, makes a humidification system an important part of any printing operation.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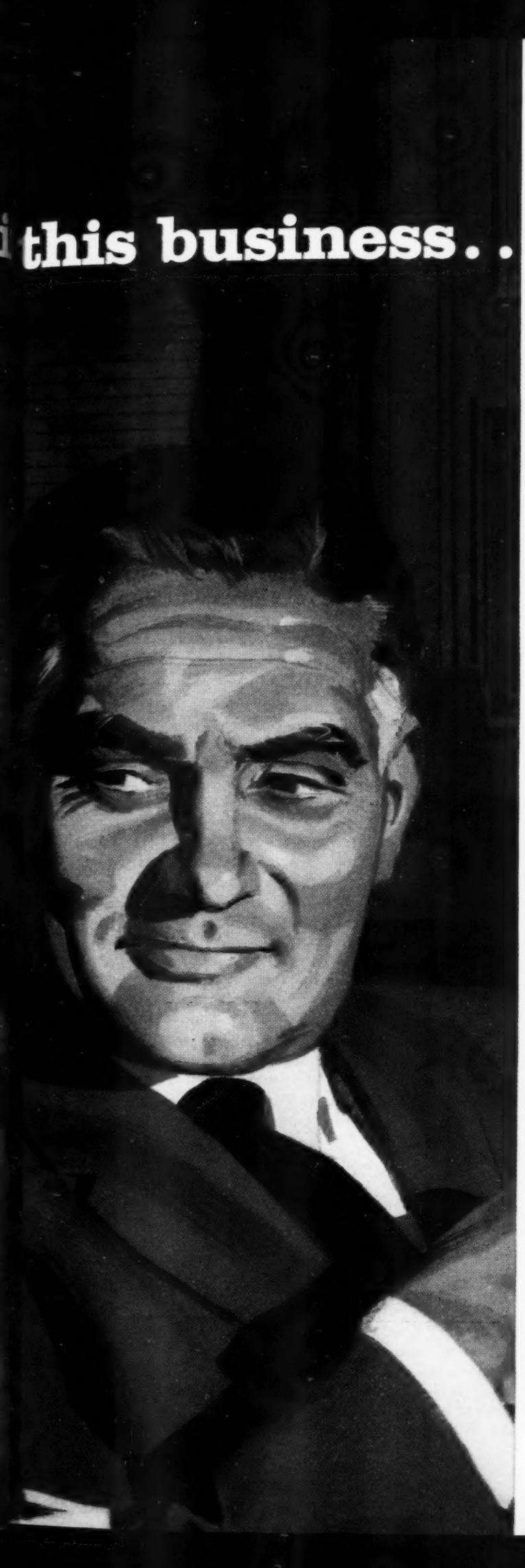


THE NEWS IS OUT THAT GOSS IS BUILDING A BRAND-NEW NEWSPAPER PRESS

We've tried to hold our enthusiasm down. But a press purchase is a major investment and every prospective purchaser wants to hear the latest from Goss. So, when publishers planning to buy new presses have called us recently, simple economics dictated we divulge some of our nearly completed developments.

If you've heard any news second hand, please excuse us. We hope you'll appreciate that we never formally announce another Goss "first" until it has been proved ready. It has taken years of research and development to incorporate so many new features into one newspaper press.

A detailed presentation of our new press is now being prepared and the preliminary announcement will be made shortly.

So—Keep Looking to Goss.

THE GOSS COMPANY

CHICAGO 50, ILLINOIS

Specialists in newspaper, magazine and roto presses

A DIVISION OF MIEHLE-GOSS-DEXTER, INC.

The leader in graphic arts . . . engineering, service and manufacturing . . . industry-wide and world-wide

● ***Drive system on offset printing press is key to its production and performance. Author takes a look at some factors which should be considered by press buyers***

Selecting DRIVES for Your New Offset Presses

By G. H. BRANDT, *Manager, Experimental Laboratory, Harris-Intertype Corp.*

THE cost of the drive system compared to the investment in an offset press is small. In industries like steel and rubber, it is quite common for electrical equipment on high production machinery to represent 10% to 30% of the total cost of the installation. This compares to only 4% to 8% for a sheet-fed offset press.

Yet, the drive on a printing press is a key to its production and performance. The close interrelation between operating parts makes this particularly true.

Let's take a look at some of the factors that point the way for select or of suitable drives for new press installations.

Drive Requirements

An offset press is essentially a constant torque, variable horsepower machine. This means that, ideally, the drive system must be capable of supplying the necessary torque at minimum running speeds with sufficient horsepower at maximum speeds. In old d.c. drives this resulted in the use of so-called tapered horsepower motors that were physically larger and costlier than necessary, merely to supply the torque required at low speeds.

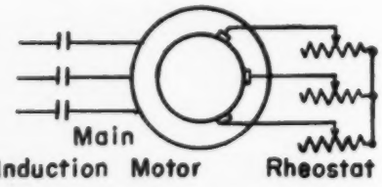


Fig. 1.—Basic diagram for wound rotor a.c. press drive. Power lost in the rheostat accounts for the relatively poor efficiency of this system.

Another important feature in a drive is its ability to maintain constant speed in the face of fluctuating loads. Good speed-load characteristics, or regulation, were inherent in the old d.c. systems; but with the gradual decline in use of direct current, it became necessary to replace them with a.c. drives.

The drive system should also provide a good speed range, from high to low, in reasonably small increments. There is an optimum or most productive speed for most jobs and the ability to select the right one without destroying adjustments, like the ink-water balance, is essential. Ability to up press speed another 50-150 iph can make a big difference in the number of sheets in the delivery pile at the end of the day. These things, of course, become increasingly important with larger presses.

Today most offset press drives fall into one of two general categories—wound rotor a.c. drives and variable voltage d.c. drives.

Wound Rotor A.C. Drives

Because alternating current is almost universally available, the majority of presses are driven by wound rotor (slip-ring) a.c. motors. As the name implies, these motors have a wound armature or rotor with the windings terminating in three slip-rings. These slip-rings are continuous bronze bands in contact with carbon brushes that conduct the power from the windings to the secondary terminals of the motor.

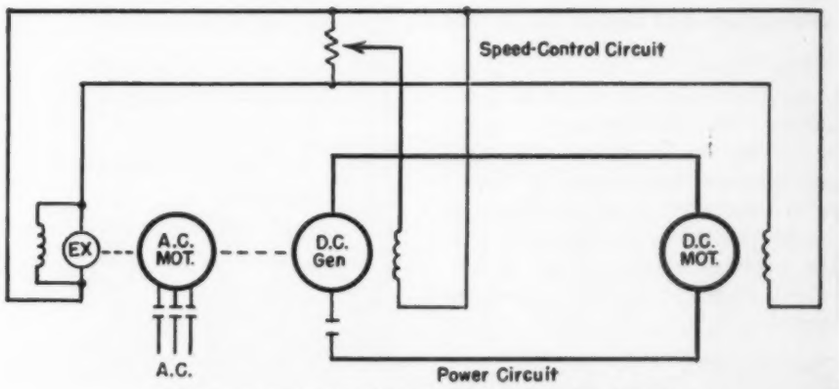
Speed of a wound rotor motor is controlled by inserting resistance by means of contactors or faceplate rheostats into the rotor circuit to absorb power. Below maximum running speeds and especially at low speeds, the power consumed by the resistance generates considerable heat that must be dissipated. This heat represents not only dead power loss but imposes an additional burden on air-conditioning and ventilating systems.

Since motor speed is a function of the amount of resistance in the circuit, varying press load for a given speed setting also has a definite effect on press speed. Speed-load characteristics of wound rotor a.c. drives are therefore somewhat inferior because of this rather wide variation of motor speed with press load. Things like the amount of ink being laid and the tack of the ink can change press speed, and settings on the master station may not be consistent from job to job.

Speed ranges of 2½ or 3 to 1 are about all that can be obtained from wound rotor a.c. motor drives. This means that even under favorable conditions, speed increments of 200 to 300 i.p.h. are about the best that can be obtained. If the resistance bank has a greater number of steps, this can be somewhat improved.

A.C. motors are simple, rugged, and require little servicing. Occasional cleaning and inspection of lubricant in bearings at regular intervals is about the only maintenance needed. When properly used and cared for, a.c. motors, despite their limitations, make satisfactory drives and require a smaller investment than the newer d.c. stepless speed systems.

Many lithographers, in the process of growth, have moved from downtown areas served by direct current to less crowded areas having only alternating current. Normally such a situation would dictate the replacement of the old d.c. drives with new a.c. equipment. This is not always the case because d.c. drives generally provide improved operation over a.c. drives, even though d.c. motors and controllers are more expensive. However, d.c. operation from a.c. mains is now possible through the use of variable voltage drives.



(Diagrams courtesy Reliance Electric and Engineering Co.)

Fig. 2.—Basic diagram for variable voltage d.c. drive represents Ward Leonard system in simplest form. The exciter and d.c. generator are frequently replaced by electronic rectifiers.

Variable Voltage D.C. Drives

Variable voltage d.c. drives are not new by any means but have gained greater prominence in recent years. Patterned after the basic Ward-Leonard system, they are known by a number of trade names such as V-S, Ultraflex, Select-a-Spede, AV, and Speed Variators.

This type of drive is as applicable to single and two-color presses as to the larger machines; it is almost without exception standard equipment on five and six color lithographic presses.

With this system, the press is driven by a d.c. motor receiving its power from an a.c. to d.c. converter. Press speed is controlled by varying the d.c. voltage applied to the drive motor armature. This results in a constant torque that approaches the constant torque requirements of the press.

The a.c. to d.c. converter may be a conventional motor-generator set, a static rectifier employing electron tubes, or a dry type rectifier. In addition to the drive motor and converter, a control system for regulating the d.c. drive motor is needed.

An overall speed range of 5 or 10 to 1 (far more than is usually required) is easily obtained with the variable voltage drive. Speed increments of 25 to 50 i.p.h.—or any desired increment—can be had by the turn of a small dial. The greater speed range and the more infinitely variable speed increments of the variable voltage system make for more efficient use of power.

Servicing Requirements

The servicing requirements of variable voltage systems are generally less than with wound rotor a.c. drives. If electron tubes are used in the power converter, they generally have an operating life of 10,000 hrs. before they must be replaced. Improvements in electronic equipment have been rapid within the past few years with an accompanying increase in reliability. Converters using dry type silicon rectifiers have an unlimited operating life with no aging characteristics when used within their rated range.

The increased operating range and greater flexibility of the variable voltage d.c. drive makes it more expensive than the relatively simple wound rotor a.c. drive system. In the lower horsepower ranges—3 to 5 h.p.—variable voltage systems may cost only 10% to 20% more than wound rotor drives. In the higher horsepower ranges, the price may be as much as 50% more or over, depending on the number of refinements provided.

Naturally, the plus features of this drive show up best when it is applied to large presses having high operational costs—where every minute saved and every additional sheet produced spells increased profits. Depending upon the type of operation, however, the small press owner can also derive a benefit if he can justify the higher first cost.

The increased cost, however, is offset by the increased production, improved power economy, and reduced maintenance costs. These advantages plus the inherently good regulation, or speed-load characteristic, of variable voltage d.c. drives are each year gaining more adherents for the system.

Cost vs. Performance

It becomes apparent that initial cost considerations should not be the sole determinant in selecting the drive system for the press. Operating or functional requirements should weigh heavily in your decision. The right drive system can make an important contribution to the full realization of the press's capabilities.

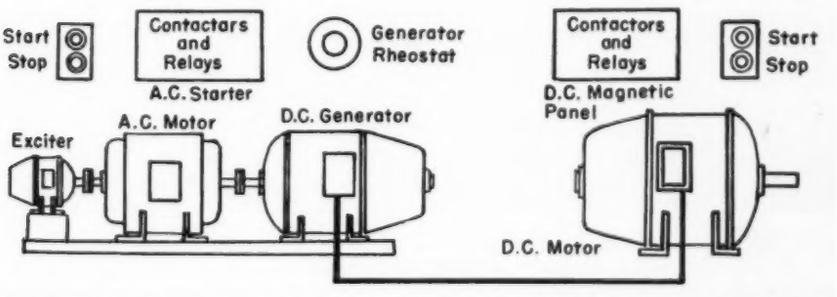


Fig. 3.—Basic "conventional" Ward Leonard adjustable speed drive. Controls consist of a.c. motor starter, rheostat speed adjuster, and d.c. motor starter.

Fill Out Reader Service Card

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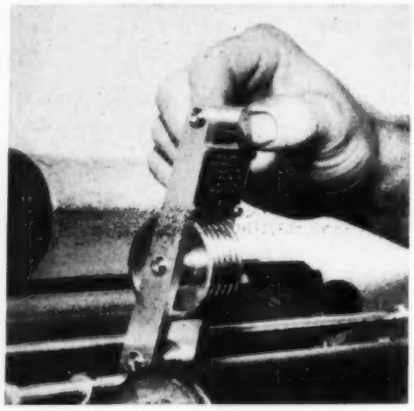
Magnetic Ink Film Thickness Measured Accurately on Press

The Cheville (go-no-go type) gauge developed for Gardner Laboratory, Inc., is designed to assist in solving the problem of meeting specifications determined by check sorter equipment manufacturers on checks printed with magnetic ink. The problem of the printer is concerned with the ink film thickness needed to actuate the check sorting equipment in banks and offices.



To insure proper operation of bank check sorting machines, the Cheville magnetic ink film thickness gauge enables pressman to regulate accurately amount of ink reaching press form rollers.

The Cheville gauge is a precision made go-no-go instrument that may be mounted on the press so its wheels will contact the top of the oscillator roller in the inking train.

When in operation, the two outer wheels of the gauge make direct contact with the oscillator roller. The four inner wheels are of slightly decreasing diameters. The first wheel is 0.4 mil (0.0004 in.) less diameter than the two outer wheels; the second wheel is 0.6 mil (0.0006 in.) less; the third wheel is 0.8 mil (0.0008 in.) less, and the fourth wheel is 1.0 mil (0.001 in.) less.

If there is too much or too little ink on the roller, the pressman, by periodically placing the gauge against the roller, can determine that the ink thickness on the form rollers is incorrect. The ink feed from the fountain can be corrected quickly.

The gauge may be mounted on a horizontal rod above the inking roller train and can be slid to any sidewise position above the oscillator. When not in use the gauge can be raised and held out of contact by suitable means.

This type of gauge has application on most any type of printing press where the control of wet film thickness from side to side of the roller is important. Circle No. 270 on Reader Service Card.

A 1975 Look at 3M's Central Research Area—The model shows the 265 acre central research area of Minnesota Mining and Mfg. Co. as it is expected to look by 1975. Seven buildings in the area have been completed; five others are under construction. A 14 story administration building is the latest project to be announced by 3M.

Litho Plant Hazards

(Continued from Page 37)

other types of accidents may be traced to litter, dirt and disorder. Here are instructions worth constant repetition: (1) Keep floor mopped and dry. (2) Keep work tables clean and dry. (3) Keep rags in proper containers. (4) Have a place for everything and everything in its place.

It takes eternal vigilance and attention to detail to keep a plant safe. It is easy to find the cause of an accident. But it takes real imagination to put the finger on a condition that may cause an accident and to correct the bad practice before the accident happens. Anticipating a great many accidents and preventing them is worth the time and trouble.

Compensation for accident prevention effort comes both in money saved and in the satisfaction that comes from knowing men have escaped the sorrow, the suffering, and the expense that go hand-in-hand with injuries.

Use the convenient yellow Reader Service Card found in this issue for requesting free literature about printing equipment and supplies.

Northeast Flatbed Pressmen's Assoc. Elects Officers—Newly elected officers of the Northeast Flatbed Pressmen's Assoc. are (left to right): John M. O'Leary, Wincester (Mass.) *Star,* second vice president; Steve Naski, Vermont Newspaper Corp., Bellows Falls, Vt., first vice president; Walter LaVanway, Rockland (Mass.) *Standard,* president; and W. Wesley Gladding, Bristol (R. I.) *Phoenix,* secretary-treasurer. LaVanway succeeds Robert H. James, Leominster (Mass.) *Daily Enterprise* as president.

● *U. S. and Canadian authorities discuss color measurement by instruments and visual means at RIT seminar.*

By WARREN L. RHODES
Graphic Arts Research Director
Rochester Institute of Technology

SCIENTIFIC APPROACH TO

The Mysteries of Color

THE highly complex, and in some cases mystifying, field of color received the full attention of an authoritative group which met recently at Rochester Institute of Technology for a three day seminar devoted to color and color control. The shortcomings of both visual and scientific color measurement, the latter through instrumentation, were revealed by some of the foremost spokesmen in the business.

Color vision and its effects were discussed by Dr. Sidney Newhall, consultant to Kodak Color Technology, who said that many colors with very different spectrophotometric curves can sometimes look alike. This effect he referred to as metamerism.

He said that pairs of colors which are metameric may look alike in one light source but look very different in another light source. In order to explain this phenomena scientists have developed a theory of color vision in which three receptors are postulated. These three receptors, each sensitive to broad regions of the spectrum, give rise to the three attributes of color: hue, saturation and lightness. By reference to these three receptors it is possible to determine from spectrophotometric curves what the colors will look like.

Dr. Newhall pointed out that companies concerned with color control should be aware of the phenomena related to color vision. "Moreover," he said, "companies should know something about the color vision of employees charged with responsibility." He suggested administering color blindness and color aptitude tests first to determine if the individual's vision is normal and second to find out something about the ability of individuals to discriminate between small color differences. He added that this ability to discriminate between small color differences declines with age.

Requirements of Light Sources

Warren Reese, vice president, Macbeth Corporation, examined the subject of illumination. Reese explained that the prime requirement of a light source is that it must have sufficient emission at all wave lengths and produce enough light for comfortable and efficient color viewing.

Reese said that there are really three viewing situations all placing different requirements and demands on the light source: (1) The selection of the desired color. This should be done keeping in mind the viewing conditions under which the ultimate consumer will look at the product. (2) Matching the desired color with printing ink. This again places critical requirements on the light source. Reese indicated that the spectrophotometric curve of the specified color such as a swatch or artist's rendering may not be the same as the spectrophotometric curve of the ink combination used to match it. Therefore, metamerism may have an effect on the matching of these colors. For this job it is necessary to have a light source which has sufficient emission at all wave lengths and without bands of strong emission such as those found in fluorescent lamps.

(3) Comparison of press proofs with the production run. In this case, metamerism is not an important effect and the requirements on the light source are less stringent. It is necessary only to have sufficient emission at all wave lengths and intensity enough for comfortable color viewing.

Reese demonstrated the complexity of the color reproduction problem when using color transparencies as copy. He showed that color transparencies have saturation which exceed capabilities of the printing process. When this occurs it is extremely difficult to reach an agreement concerning satisfactory reproduction. Hence, standardization of light sources is very important.

Many of the participants in the discussion following his presentation stated that their essential difficulty was in getting their customers and in some cases their supervisors to understand the importance of lighting and to appreciate the necessity for some kind of lighting standardization.

Measurement of Color

The seminar director, F. L. Wurzburg, jr., Printing Ink Div., Interchemical Corporation, dealt with the subject of color measuring instruments and specifications. He stated that the eye is an exceptionally good device for making comparisons of colors which are side by side and indicated that in this viewing situation no instrument is equal to the task. However, when the samples are separated by space or time, the precision of the eye declines.

The basic tool of color measurement is the spectrophotometer, said Wurzburg. The spectrophotometric

curve is a complete and unambiguous record of the selective absorption properties of objects. The spectrophotometric curve, however, does not in itself tell how a color will look. In order to determine how the color will look it is necessary to use the three receptors theory and convert spectrophotometric curves into data which can be plotted on a graph.

The CIE system of color specification is very useful in this respect because the three receptor curves and the method of plotting have been accepted by international agreement. The data converted from spectrophotometric curves are plotted on a two dimensional graph. The hue of the color is indicated on the graph by dominant wave length, the saturation by purity and the lightness by luminance. Obtaining colorimetric information by means of spectrophotometry is the most precise and accurate method available.

Colorimeter Inaccuracies

Colorimeters have been developed to make the job simpler and easier. These colorimeters attempt to match the CIE curves by using appropriate filter-photocell combination. None of the existing colorimeters are entirely successful in achieving this match. The colorimeter may be tested by means of two simple requirements. All colors which look alike must give the same values on the colorimeter. Secondly, all colors which do not look alike must give a different result on the colorimeter.

The inaccuracies of a colorimeter can be reduced by using what Wurzburg referred to as the "hitching post." In this instance the reference color or color standard should be made which has a spectrophotometric curve very similar to the color to be measured. This reference standard can be calibrated by the Bureau of Standards or by some of the companies providing this service. When using the colorimeter, the sample color is always compared against this standard. Thus, errors due to an inaccurate match of the CIE color mixture curves and errors due to instrument scale linearity are reduced.

Wurzburg also spoke on densitometers and other arbitrary three color instruments sometimes called colorimeters. Unless the curve of the filter-photocell combination closely approximates the CIE standard observer, photoelectric instruments should not be called colorimeters. These devices are unsatisfactory for determining how a color will look because it fails to meet the two previously stated requirements.

Densitometers, however, are useful for controlling the press operation where the objective is to set the amount of ink which is being transferred to the sheet. Densitometers are excellent for this job because they are easy to use.

How to Specify Color

Color specification and color tolerance were the topics presented by W. L. Rhodes, head of the Graphic Arts Research Dept., Rochester Institute of Technology. In his review it was pointed out that there are several ways of specifying a color: (1) A spectrophotometric curve. This is the most accurate and precise method of specifying the color. Agreement among the spectrophotometers is very good and the errors brought forth by Wurzburg relating to colorimeters are not present.

Rhodes pointed out that the geometry of the spectrophotometer must be taken into consideration when determining CIE values from the spectrophotometer. If the surface of the printed product and the reference standard are not identical then some error may be introduced.

Some spectrophotometers have an integrating sphere. This sphere may include either all or most of the specular component of the sample. Of course this viewing situation does not correspond at all to the way the eye looks at the sample. Some other spectrophotometers illuminate at 90 deg. and pick up at 45 deg. The light reaching the sample is highly colluminated and the viewing angle narrowly restricted to 45 deg.

"May I borrow a cup of ink?"

This situation, although somewhat better than the integrating sphere, does not correspond to the average viewing situation. Normally the light comes both from the large source and from the walls and areas surrounding. At the present time no spectrophotometer has been made which duplicates the average viewing situation. Although this is a handicap it does not nullify the advantages in using a spectrophotometer in color measurement.

(2) Permanent standards. These standards have a long color life, but even these change in color with time. The best known of the permanent standards are ceramic, baked enamel and plastics. It is unlikely that the spectrophotometric curves of these standards will match the spectrophotometric curves of production samples. Therefore, when comparing the standard in the sample visually several light sources should be used and any metamerism observed.

(3) Color sample. The most useful color standard for control of production is the sample regardless of whether the sample be a printed product, a painted sample, or a cloth swatch. The least amount of disagreement will result from comparing production samples with the production run. Occasionally a printer will be given a sample of cloth, a ceramic dish or a painted plaque for use in controlling the production run. In these cases the printer must be aware of the possibility of a metameric match.

Visual Tolerance Limits

Although visual matching during production is the most useful means it is often necessary to specify tolerances. Since tolerances are three dimensional—hue, saturation and lightness—it is extremely difficult to prepare physical samples to use for visual tolerance limits. For this reason it is often desirable to specify tolerances in colorimetric terms.

Spectrophotometric limits are un-

(*Continued on Page* 54)

Counts and Stacks Newspapers For Bundling at Press Speed

FOR several months, a Goss Varistacker machine has been in daily operation in the Toronto (Can.) *Star* mailing room. The Varistacker accepts papers from the press conveyor. Through an electric eye, the papers are counted according to pre-determined number for each bundle and stacks them automatically into two lifts with half the papers in each stack turned to position the folded edges on opposite sides.

The Goss Varistacker is a fully automatic machine designed to receive the stream of overlapped newspapers from the press conveyor at production speed.

Counting-Stacking Technique

The papers enter the machine from the press conveyor folded edge forward, passing through a short speed-up section, where they are counted by the Goss photoelectric counter and are then separated for stacking.

When the correct count for each lift is reached, the stack is deposited in one of two rotator baskets. While the second lift is being counted and formed, the first lift is turned 90 deg. and raised to the exit conveyor position. The second lift is similarly handled by the second rotator basket and is brought up under the first lift at the discharge position to form the complete stack of two lifts.

Now the completed stack is pushed out on the table conveyor, in readiness to receive the bottom and top wrappers from associated machines and then is wire tied into a completed bundle.

Keeps Up with Press Speed

The Varistacker is designed to operate at 30 cycles of two lifts per min., matching the present press speed of 60,000 papers per hr. Thus, it will deliver stacks of as few as 40 papers in two lifts of 20 each, straight run, or 20 newspapers in two lifts on a collect run. At reduced press speeds, stacks of fewer papers can be formed.

The machine is designed to handle standard, tabloid or supplement size papers after suitable adjustments have been made.

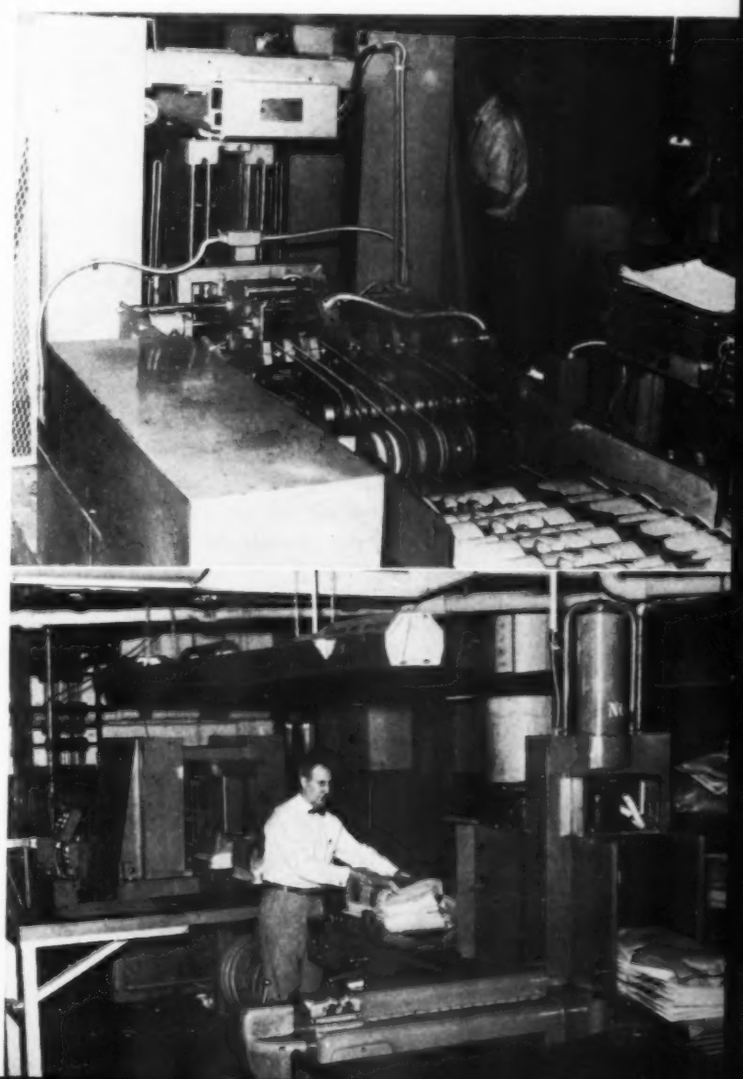
The flow of papers through the machine takes place at normal conveyor table height to permit hand flying in emergencies.

Output of the machine may be straight ahead, to the right or to the left. The direction of delivery to be determined at time of order. This permits maximum flexibility in fitting the unit into any mail room.

The Goss photoelectric counter is incorporated in the Varistacker to actuate and control the machine cycles. By setting the counter to any number from 10 to 50, the number of newspapers in each lift is determined. Similarly, a selector switch is set to any number from 1 to 6 to vary the number of lifts in each stack. Utilizing these two controls, the stack size can be preselected to suit particular edition requirements.

The machine is 9 ft. 7 in. long, including a discharge conveyor, 5 ft. wide and 6 ft. high. It is powered by a 2 h.p. motor and requires 30 c.f.m. of air at 60 p.s.i.

The unit, it is announced, will be available with auxiliary automatic programmed count control for odd count bundles.



Upper picture: Infeed end of Goss Varistacker accepts papers from press conveyor, electric eye counts predetermined number of papers for bundle, separates them from stream and turns half the number around ready for application of wrapper and wire tying.

Lower picture: At left is discharge end of Goss Varistacker. Stacked papers travel along conveyor for application of top wrapper after which they enter the wire tying machine. Tied bundles then move down roller conveyor to truck loading dock.

Uses Spectromet Analyses

Rolled Plate Metal Co. announced last month it is making accurate analyses of all molten photoengraving metal before it is formed in photoengravers' plates. The analyses are conducted with a Spectromet instrument by recording light rays of differing wavelengths thrown off by burning, molten metal. Any deficiency in molten metal composition can be corrected before it is cast into rolling slabs.

Avoid Ink Troubles

Having trouble with fast drying inks? An ink agitator will help keep the ink from drying in fountain and will permit ink to be used to the very bottom of the fountain without refilling. Keeping the agitator running during press shutdowns saves time when press run resumes, suggests the Lithographic Div., New York Employing Printers Assoc., Inc.

Mysteries of Color

(Continued from Page 52)

satisfactory because, as Newhall pointed out, the spectrophotometric curve is not a good indicator of the appearance of color; and the curves may be especially sensitive in some regions depending upon the color. Although applying plus and minus limits to tristimulus values is somewhat better, it is still not satisfactory. The reason for this is that the CIE diagram is non-uniform with respect to color differences. Small distances in some regions of the CIE diagram give rise to large differences in appearance of colors, whereas in other regions large differences in points on the diagram give rise to small visual differences.

Overcoming Deficiencies

There are several devices which have been developed to try to overcome these deficiencies of the CIE diagram. Most of these devices are mathematical transformations of tristimulus values. Reference to uniform chromaticity scales and other transformations are adequately covered in the textbook distributed at the seminar entitled *Color in Business, Science and Industry* by Deane B. Judd, National Bureau of Standards.

Several of the seminar participants pointed out that for printing, painting and sheet gelatin production a light and dark limit is established by selecting samples from the run. These light and dark limits are excellent when the raw materials are combined in the proper amounts and produce the desired result. If, however, the color of ink during printing changes, light and dark limit samples are no longer useful.

Rhodes said that Munsell is now preparing limit samples in Munsell chips. These limit samples are mounted on a board with circles cut out between the specified color and the limits. By placing these circles over the production run, it is possible to determine whether or not the production has exceeded the specified limit. These chips can be provided to very close tolerance and the limits are three dimensional.

Vendor-buyer relationships should deal with shipments rather than single pieces. During production the vendor should collect accurate color information. The buyer, on the other hand, must use quality control methods, particularly lot samplings, in order to determine something about the entire shipment rather than the single or small number of pieces provided by the vendor.

Lamson Purchases Jampol

Lamson Corporation of Delaware has announced the acquisition of the business assets of The Jampol Co., Inc. According to F. D. Weeks, president of Lamson, the newly acquired company will continue operations with its present personnel under the name of Jampol Corporation. Howard M. Jampol, president, Jampol, and Karl J. Herminghausen, secretary-treasurer, Jampol, will remain with the company.

RIT Quality Control Program

The tenth annual program of quality control for the Graphic Arts will be held at Rochester Institute of Technology, Rochester, N. Y., June 6-10, according to Harold M. Kentner, director of RIT's Extended Services Div.

Prints Charming Rules Leap Year Style—Prints Charming and two Student Printses are to don golden slippers and reign over Printing Week—Leap Year style—in Cleveland. As might be suspected, a group of ladies (belonging to the Women's Ad Club) is behind the movement to replace the traditional fair queen of Printing Week with a masculine counterpart. The ladies have constructed the above debonair, composite Prints to reign until his majesty and court are selected.

Flexo Printers Will Hold Forum

Preparatory procedures from raw copy to press run will be explored at the Flexographic Technical Assoc. Annual Meeting and Technical Forum, Palmer House, Chicago, Feb. 4-5.

A series of technical discussions geared to the theme—*Four Basic Steps to Quality Flexographic Printing . . . Through Better Preparation*—will be held during the two day meeting. Other features of the meeting will be elections, annual reports, and presentation of plaques to winners in FTA's First Annual Awards Competition. There will be 20 awards including first prize and honorable mention in all categories and a best in the show award.

The initial forum will consist of two concurrent sessions on techniques of copy preparation. The first session on film and foil will be moderated by John Rich, Riegel Paper Co.; the second on paper and paper board, by William S. Grimes, Orchard Paper Co.

On the afternoon of the first day, Stephen Vamvaketis, United States Rubber Co., will moderate a forum dealing with evaluation of engravings and plates. The other forums scheduled deal with cylinder preparation, moderated by Thomas E. Williams, Dixie Wax Paper Co., and problems of setting up the press, with Frank A. Hamel, jr., Del Val Ink & Color, Inc., as moderator.

144 Pages from One Folder Claimed by Washington *Star*

What is thought to be a record number of newspaper pages from one folder was set by the Washington (D. C.) *Sunday Star*, for its Dec. 6 issue, using nine Goss Headliner press units feeding into a Goss 3:2 folder. The 144 pages, which included color, made up the regular eight sections which were printed throughout the collect press production run.

This pre-holiday edition of the *Sunday Star* contained 294 pages. In addition to the 144 pages in the eight regular sections, 150 pages in four sections were inserted. These included a 48 page *TV Magazine*, a 44 page *Star Magazine* section, 10 pages of color comics and a 48 page *This Week Magazine*.

Quick Color Ink Washups On Chicago Sun-Times Presses

THREE portable automatic press washup attachments installed on newspaper presses at the Chicago *Sun-Times* have reduced by an average of 30 to 45 min. the time required for press washups during color ink changeovers, it is reported.

The device, an auxiliary portable attachment, which can be designed to fit most newspaper and commercial rotary printing presses, was developed by Dayton Industrial Products Co., Div. of The Dayton Rubber Co.

"We formerly did washups by the core roll waste method and by hand, a job that would take approx. 30 min. or more during a color ink change, using one maintenance crew," reports Jack Brugg, *Sun-Times* press room superintendent. Brugg also said: "Within 3 min. after applying the washup attachment and running the press at very slow speed, we are ready to convert the ink fountains, and may save up to 3 hrs. daily in press downtime. The attachment is portable. One maintenance crew can move the cleaning units from one job to another as may be needed."

How Washup Unit Works

The washup unit consists of a single control bar and a series of individual Nylon blades running the full width of the oscillator drum. Mounted on special brackets at either end of the press, the bar is operated by a ratchet lever to distribute pressure over the entire roller surface when removing ink. During the washup operation, kerosene is applied with an oil can directly onto the oscillator drum. As the diluted ink is removed, it flows down into the drainage tray and is taken from the tray with a suction pump during periodic cleanups.

The Dayco washup units at the *Sun-Times* are attached to Goss Headliner black deck, half color deck and overhead color cylinder deck presses, but provisions are being made to attach brackets to additional presses used in color operations, reported Supt. Brugg.

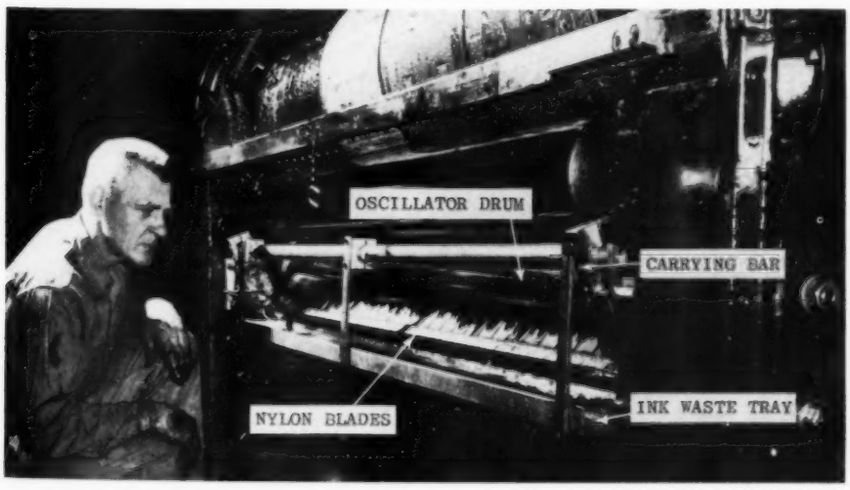
Brugg also said that with yellow inks, the attachment speeds makeready by nearly 50% and true color printing is gained in half the time formerly required with hand washup and core waste ink removal.

Special blades for the Dayco washup attachment were designed by Ray Richter, product development engineer, assigned to the Dayco printing department, and are manufactured by the company's Cadillac Plastic and Chemical Co.

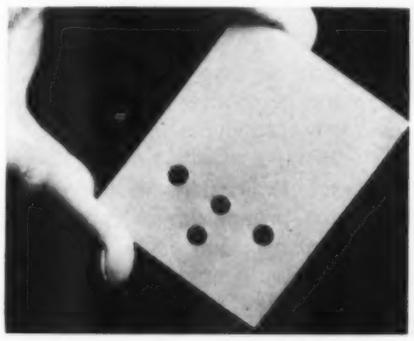
"We have fabricated the blades into 2 in. wide flat Nylon sections," said Richter. "Each blade is mounted separately in a uniform plane across the control bar and ground to a close tolerance of 0.0050 in. for precision fit."

The blade control bar extends beyond the paper web by 6 in. on each side. In this way, ink is also cleaned from that portion of the drum not feeding the paper web to avoid unwanted color bleeding at the drum edges.

Richter also said feasibility tests in more than 30 specialty printing establishments over a two year period have been made successfully, especially on wide-web units, and with most solvents and inks. Included were special quick-set, gloss, fluorescent, lacquer base, aniline and heat-set inks.



This newspaper press unit has been fitted with a Dayco removable and portable washup device. Cleaning is done by contact of a multiple-part Nylon blade which contacts the oscillator drum. Diluted ink flows into tray from which it is removed by suction pump during periodic cleanups.



One of the blade sections used in Dayton rotary press washup device. Each section is 0.0050 in. thick by 2 in. wide. Beveled edge at top contacts the oscillator drum. Holes in lower part are used for mounting all of the blades side by side the entire width of the control bar to form a continuous scraping edge.

Publication Tells History of Paper and Type Design

A chronological story of paper from its invention in 105 A.D. is combined with the story of type design in the latest issue of *Inspiration for Printers* published by West Virginia Pulp and Paper Co.

Examples of the types of Gutenberg, Nicolas Jenson, Robert Estienne, etc., appear in facsimile reproduction along with engravings of early paper manufacturing operations. Full color illustrations of paintings for the period under discussion accompany the text. Periods of design which are described are the Gothic, Renaissance, Baroque, Rococo, Georgian, Neo-Classic, Victorian and Contemporary.

Copies may be obtained by writing to West Virginia Pulp and Paper Co., 230 Park Ave., New York 17.

RESEARCH

Activities in

PRINTING INDUSTRY

Color Ink Research Program—A research program designed to study process inks for four color printing has been established by Shelton Color Corp. Data from the program will be made available to the industry, according to Ted Shelton, company president.

Research Promotions at Champion—Recent promotions at the Champion Paper & Fibre Co.'s research and development division include the following personnel. Roger Warner is now manager of the engineering department replacing Robert Forrest, assistant director of general plant engineering, operations group.

Preston Daneff has been promoted to electrical research and development group leader. T. Edward Knapp is now in charge of the company's European and licensing division. John Teare assumes many of Knapp's former duties as manager of the patent, information and technical services department.

New manager of business and personnel administration is Irvan D. Carberry. Harold Joiner was named administrative assistant to the director of research and development, W. Phalti Lawrence. A research group composed of Cornelius Betten, Harold Judd and James Stone has been established to explore possibilities in the production of chemical raw materials, by-products, and new products.

New Era Research Manager — Frank A. Ross has been named manager of research and development, New Era Manufacturing Co., producers of multiprocess presses, it was reported by C. Richard Fairlamb, vice president and general manager. Ross has served as engineering consultant, sales department, Cottrell Company, and was chief research engineer, Miller Printing Machinery Co. He also served as chief engineer in Miller's web press division.

ROSS

Brainstorming Used by GRI — Tentative research projects for the future have been announced by Gravure Research, Inc. The projects were developed out of meetings held on Sept. 9-10 in New York utilizing brainstorming techniques.

Paper waste control and improvement in color correction techniques were among the more practical suggestions out of the more than 50 which were gathered. The meetings were held under the direction of GRI president, Carl M. Metash, and research director, Harvey F. George.

WHAT'S AHEAD FOR THE READER

A February issue packed with reliable production information of interest to printers in every size plant. One informative story deals with spiral tension lockup systems for rotary letterpresses.

Our editors will also be filing stories of the important developments reported at the Great Lakes Newspaper Mechanical Conference. Keep abreast of changes in newspaper production practices through these on-the-scene stories which present the best of the Conference's program material.

The national observance of 1960 Printing Week will be graphically reported in February to show how various U. S. cities handled this major educational and public relations effort.

In addition, look for the conclusion to the current series on *Status of Graphic Arts Research* in which the author offers a plan he says is necessary to guarantee the future of the printing industry. Other regular features will include the popular Idea File, news of the industry, printing patents, and announcements of new equipment and supplies.

IAES to Organize Research Program

An exploratory meeting was held recently by the Intl. Assoc. of Electrotypers & Stereotypers, Inc. in order to determine the practicality of organizing a research program. The program is to be a cooperative industry-supplier project in the field of duplicate plate manufacturing.

Directed by Joseph C. Ashmead, vice president, Neenah Electrotype Corp., the meeting resulted in the decision that all production operations are to be covered in establishing minimum standards for molding, plating, casting, etc., with full specifications for production. Associate members agreed to supply analysis and testing services, and equipment. They also agreed to serve with industry representatives on sub-committees to help establish the standards.

Among the IAES officials attending the meeting held in Chicago were IAES president, Robert H. Kennedy, Detroit Electrotype Co., and Floyd C. Larson, IAES secretary-treasurer.

Mid-Atlantic Conf. Program Features

New products that are or soon will be available for use in newspaper plants will be discussed by equipment manufacturers and suppliers at the Mid-Atlantic Newspaper Mechanical Conference, Mar. 17-19. Sponsored jointly by the Pennsylvania Newspaper Publishers' Assoc. and the New Jersey Press Assoc., the conference will be held at the Bellevue-Stratford Hotel, Philadelphia.

Five minute talks by manufacturer and supplier representatives will be featured at the session on new products, according to conference co-chairmen, John J. McGann, mechanical superintendent, Harrisburg (Pa.) *Patriot-News*, and Richard B. Brown, mechanical superintendent, Asbury Park (N.J.) *Press*. The session will be conducted by Robert Buckley, Ludlow Typograph Co.

Other sessions planned include a machinist workshop and discussions by authoritative sources on various mechanical operations.

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THE COMPANY THAT THINKS AHEAD . . . DOES THE BEST JOB *TODAY*

Pre-Press Techniques

(Continued from Page 41)

makeready time as much as 65%.

There have been other methods developed for accomplishing the same purpose. For instance, Time, Incorporated has developed a system built around the fixed tension lockup used in its new high speed press plate cylinders.

In this method, originated at Time's Springdale Laboratories, all color plates for any page are registered together as thin electrotypes in flat form. This is done in a fixture designed to position them exactly according to the particular press imposition of which they will be a part. Each color is registered to the key color by means of a transparent overlay proof of the key. As soon as the plates are in proper position, holes are punched in the bearers of the plates. All subsequent operations, including curving, laminating, scarfing, and trimming are done on special fixtures with lugs to fit the holes in the bearers. The final operation, of course, is to trim the bearers carrying the punched holes.

Meredith Publishing Co. of Des Moines, Iowa, has developed a similar system, using an optical device for registering color to color. Plates are also punched in the bearer so they may be finished while held in positive position.

W. F. Hall Printing Co. in Chicago has recently patented a system for web press operation which can be adapted for universal use. Hall's press cylinders are accurately scribed and registered together. Plates are registered in a fixture, using transparent overlay proofs, and scribe marks are made on the plate bevels which relate to the scribe marks on the press cylinders. This is basically similar to the system first described except that plates are related directly to the cylinder and not to an underlay base sheet.

As another variation, work is in progress on an attachment for a curved plate proof press. This will consist of an overlay fixture similar to what was previously mentioned as the scribing saddle. The proof press cylinder will be marked identically with the scribed pattern on the press cylinder, or on the base sheet, and plates can be registered and scribed on the proof press, as well as being checked for printing quality.

Other methods are also available. The Taylor Machine Co. in addition to making an optical device for registering flat forms, has one adapted to curved plates on a rotary press. This method makes use of a layout sheet attached to the impression cylinder, to which plates are associated on the plate cylinder. A variation of this system also allows for registering plates on presses with a common impression cylinder.

A Midwest electrotyper is now developing a means of making curved plates with register marks, so that they may be put to press with a fixture attached to the press.

All these methods are aimed at the basic purpose of reducing that portion of press makeready time required for getting proper lineup and color register. Every method has the double barrelled effect of cutting direct makeready costs on the one hand, while making more production time available on the other.

Makeready on Rubber Plates

For many years some printers have had jobs requiring very short makeready, such as late news pages for weekly news magazines, or books where quality standards were not too strict, especially pocket books. Many of these jobs were all or nearly all type forms, which could be run with rubber plates. The methods they have adopted make it possible to makeready these jobs on the press in minutes instead of hours, due entirely to the pre-press preparation.

Two or three methods are in common use, all of which employ a wrap-around sheet for the plate cylinder onto which are mounted sticky back rubber plates for the whole press form. In the case of black type forms, this is done on a lineup table using precut sheets, usually of manila, which exactly fit the lockup mechanisms of the plate cylinder. A deadline is established on this sheet, from which a geometric layout by measurement is made, taking into account folio position of pages to allow for proper folding. This sheet is mounted around the plate cylinder in very much the same fashion as an offset plate, and thin, flexible rubber plates are fastened to it in proper position. Where two color work is used in the book field, a Registerscope or Opti-check machine is often used to transfer position reference from the black sheet through an optical system, so that the color plates may be put in register with the key form. This provides two wrap-around manila sheets, the second one being a skeletonized color form only, with rubber plates representing the color inserts for certain pages.

The big problem in conventional letterpress makeready is that individual plates, usually one-per-page, must be put on the press one at a

Minimum Makeready Forum—Participants in the Minimum Makeready Forum held last month in New York City which dealt with methods of reducing makeready time and was sponsored by the Letterpress Div., New York Employing Printers Assoc., were, left to right, seated: O. F. Duensing, Vandercook & Sons, Inc.; S. C. Saunders, Cottrell Company; A. F. Oakes, Charles Francis Press, Inc., division chairman; Leonard Friedman, Carey Press Corp. Standing: Robert B. Davis, Davis, Delaney, Inc.; Murray H. Berger, Comet Press, Inc.; George Adler, Arrow Press, Inc.; George Petrasko, Harris-Intertype Company; and Edward Blank, NYEPA staff.

time until the entire form is built up. It seems obvious that many of the techniques would be obsolete and the problem made minor by the development of a practical one piece or wrap-around plate system for rotary letterpress.

This has long been a dream of letterpress printers, and recently there has been some gratifying progress in this direction. Several different systems have been recently unveiled, and their potential benefits are so great that further development work will undoubtedly become a major undertaking of practically all segments of the letterpress industry: engravers, printers, equipment manufacturers, metal supplier and many others. They have in common the advantage of complete form pre-register, produced entirely on the stripping table or the photocomposing plate printer. The finished plate has a very shallow etch. The plate metal is thin enough to flex readily, thus it can be bent or wrapped by hand around the plate cylinder and mounted as a single unit.

Wrap-around Press Makeready

The wrap-around press uses a large, cylinder size inking drum to obtain full form coverage without bottoming (inking the non-printing areas). Printing pressure makeready is limited to full sheet underlays on the plate and impression cylinders. Underlays beneath the plate are used only to bring the printing surface up to proper pitch line. The impression cylinder underlays compensate for changing stock thickness and help produce the proper travel or pitch line.

However, even the staunchest advocates of wrap-around letterpress systems will admit that it will be some time before the new process is far enough along to have a significant effect on the big rotaries in use today. At least until that time comes, printers will undoubtedly find it profitable to continue developing and refining the techniques of pre-proofing and pre-register mentioned, as an immediate and practical answer to the problem of reducing makeready.

THE DAILY TIMES
DAVENPORT, IOWA

The Enid Daily Eagle
ENID, OKLA.

Pittsburgh Post-Gazette
PITTSBURGH, PA.

THE CORNING LEADER
CORNING, N. Y.

ROCHESTER POST-BULLETIN
ROCHESTER, MINN.

THE DAILY NEWS-TRIBUNE
LA SALLE, ILL.

The Greenville News
GREENVILLE, S. C.

WATERBURY AMERICAN
WATERBURY, CONN.

AURORA BEACON-NEWS
AURORA, ILL.

Vicksburg Evening Post.
VICKSBURG, MISS.

The Boulder Daily Camera
BOULDER, COLO.

FREMONT TRIBUNE
FREMONT, NEB.

THE PLAIN SPEAKER
HAZELTON, PA.

St. Paul Dispatch
St. Paul Pioneer Press
ST. PAUL, MINN.

The Vancouver Sun
VANCOUVER, B. C.

SPRINGFIELD LEADER AND PRESS
SPRINGFIELD, MO.

The Daily Olympian
OLYMPIA, WASH.

The Detroit Free Press
DETROIT, MICH.

THE KOKOMO TRIBUNE
KOKOMO, IND.

THE WENATCHEE DAILY WORLD
WENATCHEE, WASH.

The La Crosse Tribune
LA CROSSE, WIS.

EVENING HERALD
ROCK HILL, S. C.

THE WALL STREET JOURNAL
CHICAGO, ILL. AND WASHINGTON, D. C.

Los Angeles Times
LOS ANGELES, CALIF.

THE NEW MEXICAN
SANTA FE, NEW MEXICO

THE DAILY HERALD
BILOXI AND GULFPORT, MISS.

THE CHRONICLE-TELEGRAM
ELYRIA, OHIO

ERNEST LOEBNER
President of Pacific Newspaper Mechanical Conference, Composing Room Foreman, The Daily Olympian, Olympia, Washington

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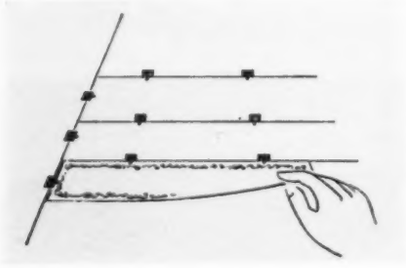
NUMBER CHECKS 3-ON

You can run small quantities of checks three on a sheet and numbered, even if you have no numbering machine equipped with skip wheels. Simply set up the check complete just once, with straight numbering machines. Then put three sets of gauges on the hand-fed platen press. Now dip-feed the sheet: top set first, then middle, then bottom. The sheet will have three checks, and the numbers will be in the right order.—*Robert E. Bowen, Bowen Printing Co., Plymouth, Ind. Courtesy Kimberly-Clark Corp.*



OFFSET PRESS MAINTENANCE

Setting of paper-covered dampeners is still a troublesome problem, according to staff members making plant visits. Good rule is: Set them as light as you think they should be set—and then set them lighter!

Blinding is always a danger when plates are gummed at end of day or at noon break. Plates should have good charge of ink before gumming. Gum should have Baume of about 10 deg., and should be smoothed down carefully. Plate should be washed out and put under asphaltum as soon as gum is dry.

When white letters must show through background colors, try to avoid more than two colors in background. The more colors you have, the greater will be the problem of keeping color from creeping into white areas. Use combinations of screen values of two colors to get unlimited variety of desired colors, without adding a third or fourth color.

To keep paper dampeners clean for longer period of time, try gumming them as soon as covering is applied and let them dry before using. Gumming at night is good practice but dampeners must be removed from contact with vibrator.—*Courtesy of Lithographic Div., New York Employing Printers Assoc., Inc.*

TO CONTROL OVERSET

In addition to our daily paper we print two other publications on which we have had continual overset trouble. Repeated complaints failed to reduce the problem so we came up with a system that did.

Our copy comes in three separate batches over as many days and as each batch is set it is measured (or estimated if not all set) and a running total of inches kept. This total includes heads, cuts, etc. We know the approximate number of inches of news required for each issue so have a set goal to shoot for.

When the editors are informed of the number of inches of type in the first and second batches they can, if need be, readjust the size of the next batch. By the time the final batch of news arrives the ads are all in and the exact number of news inches is easily calculated by subtracting the total ad inches from the overall total in the issue. Then by subtracting the second batch total from the required total gives the remaining inches needed to fill up. This figure helps because the last batch contains copy marked "set if necessary" which allows us to do just that.

This type check requires but a few minutes time but has reduced our overset, which reached 55 galleys once, to nil. — *Gene Martin, Foreman, Temple (Tex.)* Telegram.

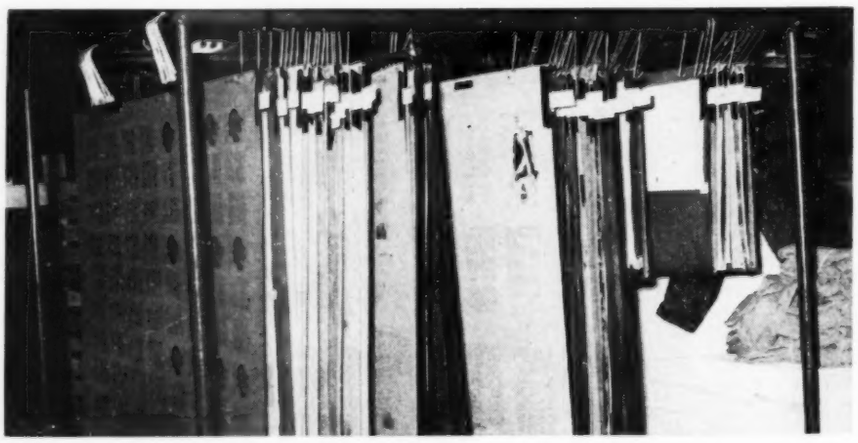
Rack Holds Variety of Offset Plates

One of the major problems in any offset pressroom is the handling of plates scheduled to be run on the presses. Whatever the source of plates, there will be a period of time when a rack will be needed.

The offset department of The Parthenon Press, Nashville, Tenn., is using a rack designed by the supervisory staff of the department and constructed in a local machine shop.

The rack shown in the illustration was fabricated at 90 deg. angle throughout in true oblong shape. The photographer erred in obtaining true dimensions. Also, the rack is trussed at the bottom as well as at the top to make a six-sided open oblong.

The frame is constructed of 1 in. lengths of cast iron water pipe welded together to make a durable and



Offset printing plate rack devised by supervisory staff in plant of Parthenon Press, Nashville, Tenn., holds wide variety of plates. Rack forms true 90 deg. angle six-sided oblong and is movable on floor.

For the Reader

A chance to be paid for ideas which have netted savings in time, money and effort in your printing plant is offered readers of *Printing Production*. If your idea is accepted for publication it will be printed in the Idea File, a regular *Printing Production* feature, and a check will be mailed to you.

Simply write down a description of the idea; be as complete as possible in your explanation. Include a photo or drawing if you think it will show the helpful idea better. Additional payment is made for items accepted with pictures.

Send as many as you wish to: Idea File Editor, *Printing Production*, 1276 W. 3rd St., Cleveland 13, O.

yet a comparatively light framework for the rack. Since this pipe ordinarily comes in 10 ft. lengths, a rack 5 ft. high and 5 ft. deep is most practical, the width to be determined by the maximum width of plates to be hung on it. The 5 ft. height permits the largest plate to clear the floor for cleaning purposes.

A rack frame 4 ft. wide (5 ft. high and 5 ft. deep) is about right for plates of 35 in. by 45 in. and 38 in. by 50 in. size. The rack shown in the illustration, had about 50 plates on it ranging in size from 17 in. by 22 in. to 42 in. by 58 in., about the greatest variety that any plant would need.

To accommodate this variety of plate sizes this particular rack is provided with a support centering the top section of the frame. Two other pieces of the 1 in. pipe cross about 1 in. from the outside top rails, giving double rail strength to the top of the rack as well as serving the purpose of supporting several narrower width plates.

The suspension hooks (an extra supply appears on the top front of the frame of the rack) are about 5½ in. long and are fashioned out of No. 9 ga. wire. At the top the curved section is large enough to hang over the 1 in. pipe of the frame. At the lower end a much smaller hook (at right angles to the first) is provided to insert in the hole in the edge of the plate.

To explain the tension principle that keeps the top of each plate stretched straight on this rack, suppose the rack width is 4 ft. or 48 in., with inside top rails about 44 in. apart, and you have a 38 in. x 50 in. plate to be suspended the 38 in. way. You have the 38 in. width of the plate swinging by the suspension hooks underneath the 44 in. width of rack frame, with the hooks "reaching" to catch on the rails for support. (A 42 in. x 58 in. plate, the 48 in. width way, can be suspended underneath the full 48 in. space of the rack.)

In each instance, the weight of the plate itself, against the pull of the "reaching" hooks, creates sufficient tension across the top of the plate to keep its top edge straight. For narrower width plates, a 22 in. width (22 in. by 34 in. plate) can be suspended underneath the 24 in. width between the center rail and either of the outside rails of the frame of the rack for the same tension stretch. A 17 in. by 22 in. plate can be fitted to hang the 22 in. way in a position similar to the 22 in. by 34 in. plate.—*P. R. Russell, Staff Correspondent.*

CARBIDE "THINSAW"
*Carbide tip has circular seat that provides maximum brazing surface, positive seating and greatest holding strength. Patented, Manufactured under license.

GAY-LEE GUARANTEES

—LONGER LIFE

—CLEANER CUTS

Try It FREE for 30 days!

The secret's in the circular seat! Patented carbide tip design and Gay-Lee method of brazing carbide tips to saw provide: positive seating, more brazing surface and greater holding strength — carbide tips will not break loose.

Designed for composing rooms, these "Thinsaws" operate smoothly without scream, pileup or sticking even on the new alloys including Dow metal. They give you cleaner cuts, excellent back rake cutting, freedom from burrs and *eliminate the need for trimmer blades.*

Gay-Lee Printer's "Thinsaws" outlast all others regardless of cost—they soon pay for themselves! Try one in your shop—absolutely free for 30 days. *If not* completely satisfied, return it for full credit.

IMPORTANT: Please specify make of machine. Also using your present saw as a template, trace the hole pattern and send us the tracing.

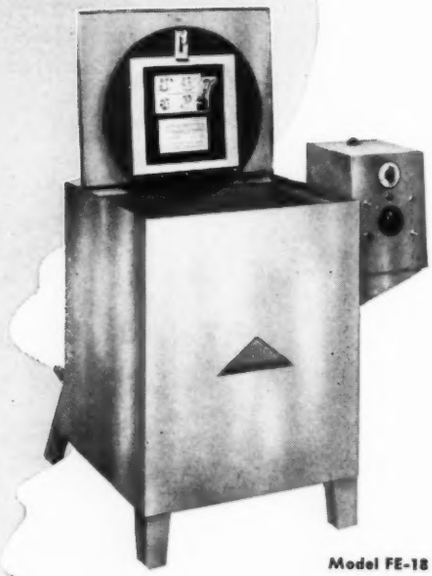
GAY-LEE COMPANY
CLAWSON • MICHIGAN
CARBIDE SAW SPECIALISTS

For More Information Circle 65 on Reader Service Card

DO-IT-YOURSELF ENGRAVED PICTURES . . .
COMBINATION PLATES AS WELL

The NEW Dirats Powderless Flow-Type Etcher is the Key!

Patent Pending



Model FE-18

WHAT IS THE DIRATS MODEL FE-18?

The Model FE-18 is a fully automatic, but smaller, *lower priced* model of the World Famous Dirats Powderless Etcher. It embodies a revolutionary concept in the art of powderless etching . . . the result of a 3 year research program, just completed.

THE FE-18 DIRATS FLOW-TYPE ETCHER PAYS FOR ITSELF!

The new Dirats Powderless Flow-Type Etcher brings quality plate-making within the reach of even the smallest shops, without increasing personnel! It enables any printer, large or small, to produce high quality fine or coarse screen cuts and combination plates as well.

See your Dirats Distributor for a Free Demonstration of the FE-18 Powderless Flow-Type Etcher . . . the key to your own quality photoengraving shop! . .

or Write for Illustrated Brochure Today!

DIRATS PHOTO-PLATE COMPANY
Westfield, Massachusetts
Tel: LOgan 8-5311

Dirats

For More Information Circle 51 on Reader Service Card

Engineering

Services for the GRAPHIC ARTS

Based upon a knowledge of printing requirements

Layout, design, construction supervision for

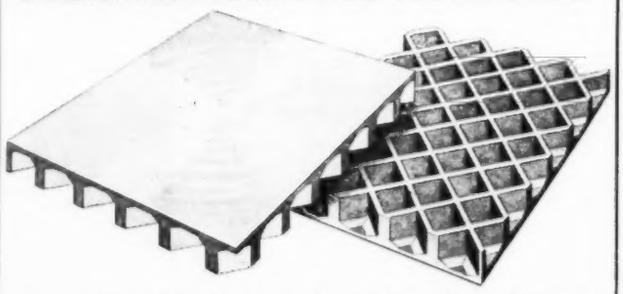
New plants—Alterations
Equipment Installation

CHAS. T. MAIN, INC.

Boston, Mass. Charlotte, N. C.

For More Information Circle 110 on Reader Service Card

LITEWEIGHT ALUMINUM PLATE BASE



Less than ¼ the weight of lead and more accurate than wood, this aluminum base will *stay* accurate, outlast them both. Made to .001", square, clean, easy to tape, easily cleaned, it saves lockup, makeready, cleanup time. Presses run smoother and last longer under a lighter load; pressmen do, too. Get any size to 9" x 10¾" in any thickness to type-high for mounting rubber plates, plastic ad plates, electros, stereos, originals. Handy full size pieces can be cut on your own metal sawing equipment to suit your needs or locked up together on big jobs.

Printing Plate Supply Company

561 W. WASHINGTON ST., CHICAGO 6, ILL.
PHONE ANDOVER 3-3037

For More Information Circle 145 on Reader Service Card

EQUIPMENT & SUPPLIES

If you wish additional information concerning equipment, supplies, and/or technical literature, please make your request on *Printing Production's* Reader Service Card to be found in this issue.

PITMAN MARKETS CABINET WHICH FUSES ACID RESISTS CHEMICALLY

The Pictograph cold fusing cabinet which fuses acid resists by chemical action has been announced by Harold M. Pitman Co., exclusive United States agent for the English-made cabinet. Used in etching copper, brass, zinc, magnesium and similar plates, the cabinet is said to be effective with pure or synthetic dragon's blood, bitumen, resin, or painting out lacquer. Sponsor claims: that the vapor acts as rapidly on a 16 ga. plate as on a 5 ga. plate; that the plate always remains flat; and that the process insures dimensional stability important for color line work. The cabinet may also be used for deep etching on copper and zinc. Circle No. 253 on Reader Service Card.

REDESIGNED ELECTRONIC BATCH COUNTER

Standard Instrument Corp. has redesigned its electronic batch counter, Tally-Count, making it suitable for all types of batch counting, machine cycling and packaging operations. Among the devices incorporated in the new Tally-Count are: (1) Pre-set decades that furnish warning signals before final count is reached. The decades may be pre-set to decelerate a motor to prevent the abrupt stop of high speed operation. (2) Photoelectric units which count and inspect production parts without contacting the material controlled. (3) Footage-yardage counter for control of material length in such operations as rollfed printing. The counter operates by riding a wheel on the surface of the material. (4) Automatic zero start which returns the counter to zero with the application of power, insuring a complete batch count for each operation. Circle No. 258 on Reader Card.

HANGERS FOR LITHO PLATES

A company known as Press-Litho Cabinets has announced a hanger for litho plates. Made of galvanized 9 ga. steel, the hangers may be used singly for small plates or in pairs for larger ones. The hanger is designed with a curved end with an inside dimension of 1⅝ in. to fit over a 1 in. pipe; the hook end has a ½ in. diameter for holding the plates. Manufacturer claims that the hangers hold the plates securely and that there is no danger of the hanger springing open, spilling the plates to the floor. Circle No. 256 on Reader Service Card.

AUTOMATIC SCARFING MACHINE FOR TENSION LOCKUP PLATES

Wesel Manufacturing Co. has introduced the Model GMM scarfing machine for cutting pockets on the underside of hard backed tension lockup plates. The machine is equipped with a carbide inserted cutter as well as a saddle designed for each plant's requirement. Additional saddles can be made for the same machine depending on the various curvatures required; these are interchangeable.

A flat cam is used to preposition and predetermine the length of the pocket to be cut. The cams also are interchangeable for plates of various lengths and sizes. Adjustable cams for those whose requirements are not standardized are available.

It is claimed that Model GMM can hold the depth of pockets within ±0.001 in., eliminating sinks which appear on the printing surface as a result of excessive impression pressures. Curved plates up to 27 in. long and in any curvature size, and 180 deg. wrap-around plates can be handled by the machine. Model GMM comes equipped with either 220 v. or 440 v., 60 cycle, 3 phase current. Circle No. 250 on Reader Service Card.

MILLER PRESS WASHUP ATTACHMENT

A washup attachment for the Miller line of cylinder letterpresses has been announced by Miller Printing Machinery Co. It is claimed that the device enables an inking unit to be cleaned in two minutes. The process of washing up is described thus by the manufacturer:

Kerosene solvent is applied to a convenient roller in the inking cluster. The press is run for a few seconds to distribute the solvent through the system. The inking cluster is rolled back, and the form roller closest to the cylinder is removed and cleaned separately. Then the washer is placed in the form roller sockets and the inking cluster is rolled into closed position, bringing double blades in contact with a steel vibrator roller. The press is run at medium speed for approx. 1½ min. to clean the inking system, including the ductor roller, ink plate and form. A single washup is all that is normally required on most letterpresses, according to the sponsor.

It is recommended that an absorbent material, such as paper toweling, be inserted into the trough of the press washer. If this recommendation is followed, it is said that the trough need not be cleaned for several press washups. The washer is available in three sizes to accommodate the Miller SG and Simplex 20 in. by 26 in., Miller SW single color and TW two color 21 in. by 28 in., and the SY or Major single color and TY two color 27 in. by 41 in. letterpresses. Circle No. 259 on Reader Service Card.

The Tally-Count made by Standard Instrument Corp. reportedly can be used for all types of batch counting, machine cycling and packaging operations. One feature of the counter is the footage-yardage counter for control of material length in such operations as rollfed printing.

Miller Printing Machinery Co.'s press washup device is said to clean an inker in two minutes. The washer is placed in the form roller sockets. With the inker in closed position the double blades contact a steel vibrator roller in the inking cluster, stripping ink from the cluster, ink plate and form.

VERTICAL AND HORIZONTAL CAMERAS WITH AUTOMATIC FOCUSING SYSTEM

Royal Zenith Corp. has been appointed United States distributor of the Electronica and Precisa reproduction cameras engineered by Hoh & Hahne. Two basic designs in varied sizes and adaptations are offered—the horizontal Electronica darkroom camera and the vertical Precisa, in both darkroom and non-darkroom models.

Each of the cameras is equipped with an automatic focusing system which reportedly brings copy into focus when size settings are made on the centralized control panel. The automatic focusing system accommodates a full range of lenses in varying focal lengths and dimensions for direct and reversed images, opaque and transparent copy and three-dimensional objects. If desired, the automatic focus may be disengaged; when it is re-engaged, the camera automatically adjusts to critical focus. Maximum copy size for the cameras is 47 in. by 55 in.

The Precisa camera employs a two lens system to achieve a range of sizes. The copy, up to 20 in. by 28 in., is held in a horizontal frame on which the camera focuses vertically through a lens-and-mirror systems. Enlargements up to 5X and reductions up to 3X are possible with a negative size 16 in. by 20 in. and a circular screen to 24 in. diam. Engineered for color separation work, the Precisa is equipped with a tube-illuminated transparency holder. The camera occupies an area of approx. 40 sq. ft.

The Electronica is available for 24 in. by 24 in., 32 in. by 32 in., and 40 in. by 40 in. negative sizes. The copyboard can be rotated 360 deg. The copy is held by a floating pressure back which can be exchanged for a vacuum system if desired. Circle No. 254 on Reader Service Card.

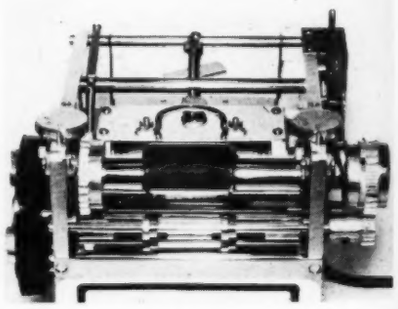
COMPACT GBC PUNCHING MACHINE FURNISHED WITH OVERSIZED DIES

The Model 12-P punching machine furnished with oversized dies for punching multiple holes for metal or plastic loose leaf binding has been announced by General Binding Corp. Known as the Pro-

fessional, it is said to punch clean rectangular holes enabling an interchange of punched sheets between all types of GBC bindings. Incorporated in the machine are a positive fixed back guide, standard 19 ring setting, new type side guide and automatic die return, states sponsor. It is 12 in. wide by 16½ in. long and 5¼ in. high. Circle No. 276 on Reader Service Card.

110 LINE MAGENTA CONTACT SCREEN TO USE WITH POWDERLESS ETCH PROCESS

A 110 line magenta contact screen, designed for use with the powderless etch process, has been introduced by Eastman Kodak Co. Other screens with 65, 85, 100, 120, and 133 lines per in. are also available. The screens are available in all standard sizes from 8 in. by 10 in. through 24 in. by 24 in. Circle No. 267 on Reader Service Card.



Small Flexographic Press — Claimed to print 6000 labels per hr., this flexographic press will print and die cut pressure sensitive label paper. A product of Sohn Mfg., Inc., it may also be used for scoring gummed, heat seal or plain paper. Space taken up without guard is 9 in. by 9 in. by 9 in. Circle No. 257 on Reader Service Card.

Load—Flip—Expose
Three steps to faster platemaking!
LOAD
Lift the glass, position the negative and plate.
FLIP
Close the glass frame. Pull the release knob and flip the vacuum frame over.
EXPOSE
Set the timer. Automatically controlled carbon arc lamp is built into the base with the reflector.
nuArc flip-top
PLATE MAKER
If floor space is at a premium in your plant or office, then you have just one more good reason for owning a nuArc flip-top platemaker.
Flip-tops take up a floor space just a few inches larger than the actual size of the plate. No partitions or curtains are necessary because the light from the powerful arc lamp is contained within the cabinet.
The combination of compactness, simple controls, automatic operation, and perfectly balanced revolving top makes it easy for skilled or unskilled personnel to make perfect plates every time.
*Send for the latest "flip-top" Bulletin A500PP
13 • 18 MODEL FT-18 $375.00
17 • 24 MODEL FT-24 $435.00
21 • 26 MODEL FT-26 $495.00
28 • 32 MODEL FT-32 $595.00
30 • 40 MODEL FT-40 $695.00
43 • 52 MODEL FT-52 $895.00
50 • 62 MODEL FT-62 $1,495.00
nuArc COMPANY, INC.
General Office and Factory: 4110 W. Grand Ave. • Chicago 51, Ill.
Eastern Sales and Service: 215 Park Ave. So., New York

For More Information Circle 138 on Reader Service Card

HOT MOLD POLISH SUPPLIER

American Solder and Flux Co. has assumed the manufacture of Imperial hot mold polish, formerly made by Imperial Type Metal Co. According to the new manufacturer, no change has been made in the formula of the polish, which is to be sold under the name of AMCO mold polish. The polish is packaged in collapsible tubes. Circle No. 251 on Reader Service Card.

ELECTRIC PUNCHING MACHINE AND PEDAL OPERATED BINDING UNIT

The Model 30 Plastico electric punching machine and the Model 30 pedal operated binding unit have been announced by Plastic Binding Corp. Features of the punching unit include double shearing action, which enables punching dies to bite into manuscripts progressively and punch dies that are individually secured and can be replaced singly. The punching area is 15 in. wide, and the dies can accommodate more than twice that width by punching the same sheet two, three or four times. The unit has a double-tripping prevention device and a ¾ h.p., rubber mounted split-phase motor, operating on 15 v., a.c. current.

The binding unit has reversible hooks and utilizes individual pins that may be replaced as necessary without waiting for new pin sets to be installed. Binding area is 15 in. wide to match the puncher. Circle No. 261 on Reader Service Card.

CUTTING AND CREASING PRESS

Apex Printing Machinery Co., Inc., has been designated as agent for the German-made Kerma cutting and creasing press. The Kerma press is available in three sizes: 25 in. by 36 in., 30¼ in. by 42 in., and 33½ in. by 49½ in. These presses are designed to cut, slit, crease, perforate and emboss.

Feeding and delivery is facilitated, states the manufacturer, by the almost horizontal position of the platen when the press is fully opened. A knee and hand trip rail is provided for misfed work. Makeready can be applied underneath the platen or behind the makeready plate. Circle No. 277 on Reader Card.

G-E ADJUSTABLE SPEED DRIVE DESIGNED IN COMPLETE PACKAGE

A line of Kinatrol eddy current coupling stepless adjustable speed drives from 5 h.p. to 100 h.p. has been announced by General Electric Co.

Along with the announcement, G-E states the line is engineered for a broad range of industrial applications. Among applications for the printing industry are single and multi-motor conveyors, cutters, laminators, corrugators, bag machines, box folders, gluers, printer-slotters, job presses, book gatherers and binding machines.

Kinatrol line of drives is furnished as complete package. Elements include drive unit (foreground), enclosure control (upper left), and operator's control station.

Automatic control provides close speed regulation as standard. G-E states that on a typical friction type load, for example, regulation of 2% of full speed can be obtained with standard equipment.

The Kinatrol line is offered as a complete packaged drive including the drive unit, control enclosure and operator's control station. The drive is designed to operate over a constant speed torque speed range. Ratings through 20 h.p., reports sponsor, are capable of continuous operation down to 100 r.p.m. at rated torque, providing a speed range of approx. 17 to 1.

The Tri-Clad 55 a.c. motor and eddy current coupling adjustable speed member are integrally designed to provide a compact drive unit. The stationary field coil and tachometer generator coil are encapsulated in epoxy resin for protection. The drive is factory tested as a package and is pre-wired for rapid installation. Circle No. 263 on Reader Service Card.

WATER TEMPERATURE CONTROLS FOR PHOTOGRAPHIC PROCESSING

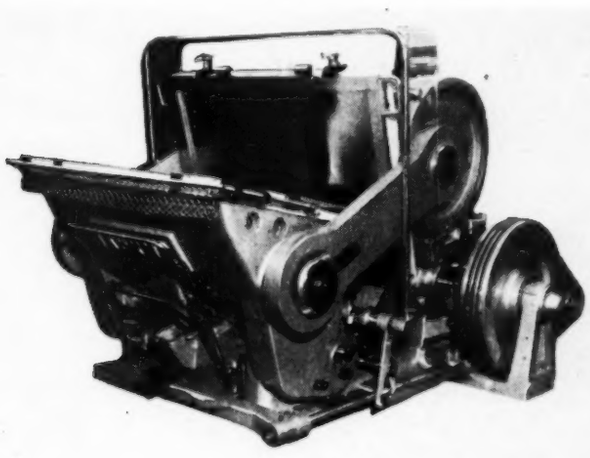
A thermostatic water temperature controller that is said to hold water temperature changes to less than 1 deg. F. has been introduced by Symmons Engineering Co. Known as Colorgard, the controller is said to be particularly valuable for color processing of film and paper where temperature variations can be critical. Reportedly, the mechanism compensates for all normal changes in supply pressure or temperature. Capacities range from 2 to 8 gal. per min., depending on flow requirement. Circle No. 255 on Reader Service Card.

PORTABLE INSTRUMENT MEASURES RELATIVE HUMIDITY IN THE PLANT

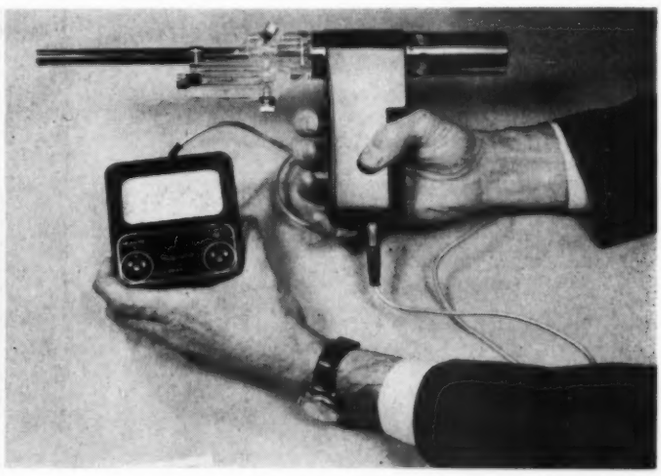
Introduced by the Atkins Technical, Inc., is a portable psychrometer which is said to accurately measure relative humidity to within 0.5%. One of the features of the A + Hygrophil, as it is called, is the speed at which it measures; less than 10 sec. is claimed.

Inside the barrel of the pistal-like instrument are wet and dry thermister beads which are employed to read the temperature and moisture content of the air which is sucked into it by means of a fan. Wet or dry bulb temperature is indicated directly by the instrument using the imbalance of a Wheatstone bridge circuit.

Applications for the printing industry include printing and platemaking plants where air moisture control is important to production. The manufacturer indicated the instrument was also valuable for determining the relative humidity in closed spaces such as drying ovens and piping accessible only by a small hole into which an extension piece of the suction tube (barrel) could be fitted. Circle No. 278 on Reader Service Card.

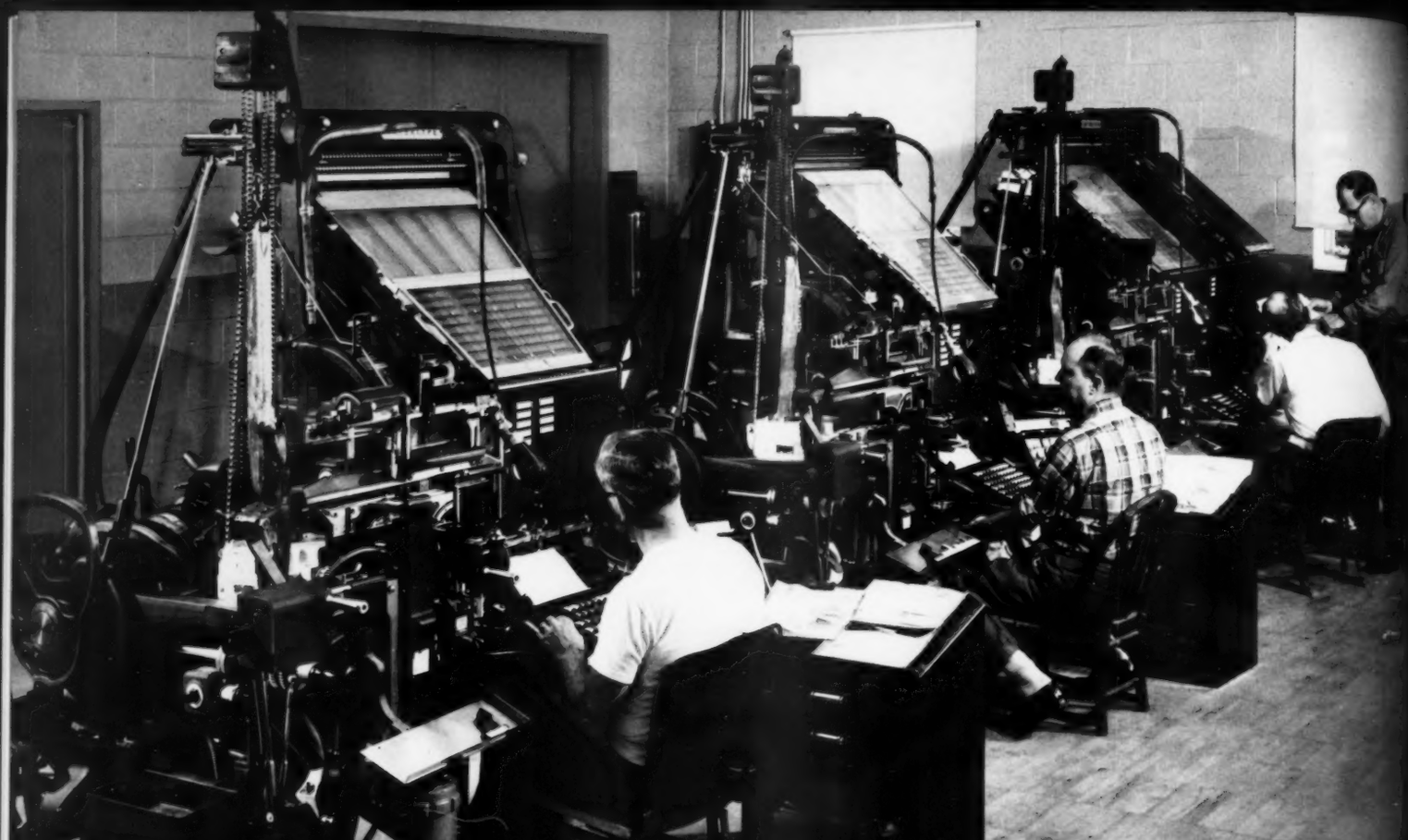


The Kerma cutting and creasing press is designed with a clutch and brake equipped with a foot pedal control which allows the press to be stopped at any point of its operation.



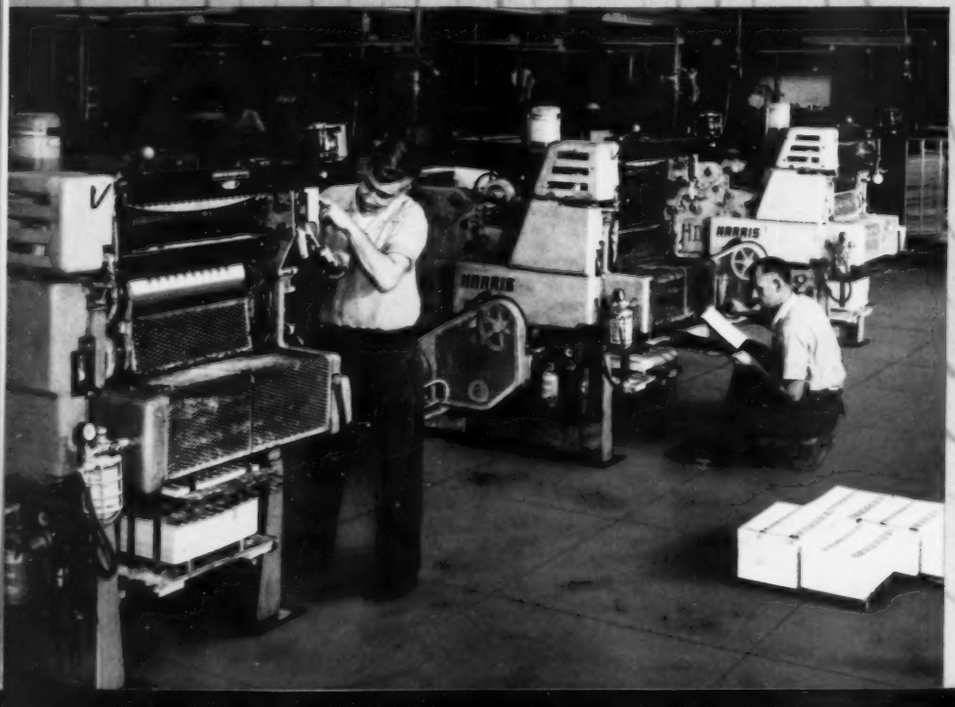
Moisture content of the air in printing plants is read in less than 10 sec. with this battery operated psychrometer, manufactured by Atkins Technical, Inc.

For More Information Circle 87 on Reader Service Card→

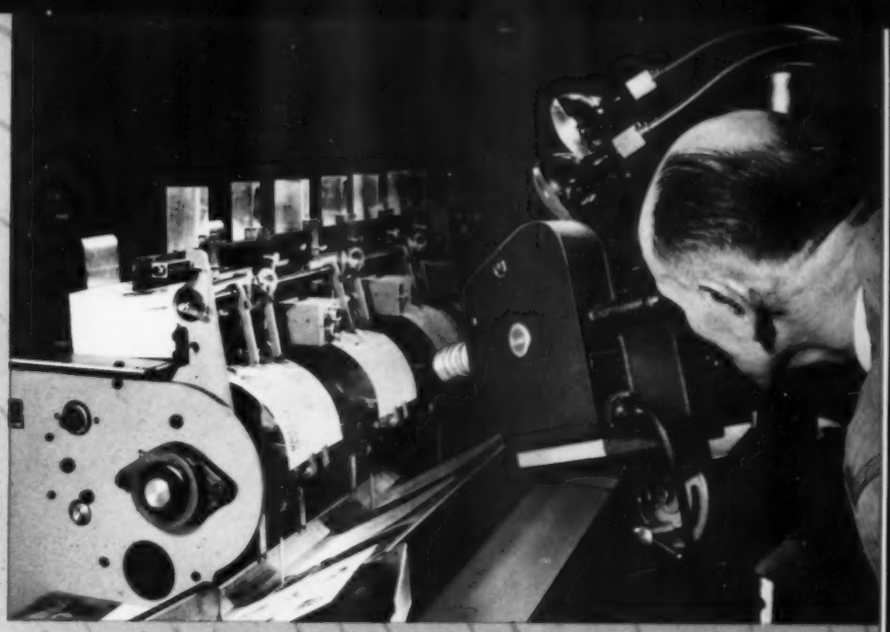


THREE NEW INTERTYPE linecasting machines at the News Publishing Company, Wheeling, W. Va., are producing advertising for the morning *Intelligencer* and the evening and Sunday *News Register*. The company has a total of sixteen Intertypes for setting news and advertisements for the newspapers. The News Publishing Company is publishe of The Ogden Newspapers of West Virginia, comprisi 12 outstanding dailies in nine plants throughout the stat

What's going on at HARRIS



UNIVERSAL MATCH CORPORATION uses Harris presses to print as many as eight different co on short runs. This battery of new Harris sing color presses is in their Hudson, New Yo plant and represents only a small portion their total Harris-Seybold equipment.



SLOW-MOTION PHOTOGRAPHY helps research the high-speed workings of this new Macey gatherer which gathers up to 5,000 sets of paper an hour.

NEWS ON FM STATIONS is so rare, it's news in itself. Which helps explain the interest in this photo of the newsroom at Station KHUL, Houston, Texas. This 24-hour 5,000-watt station is one of the first FM stations to provide complete news service. Shown here is their new Gates FM-5B 5 KW FM transmitter, Gatesway audio-control console and 3-speed turntable.

INTERTYPE

HARRIS INTERTYPE CORPORATION

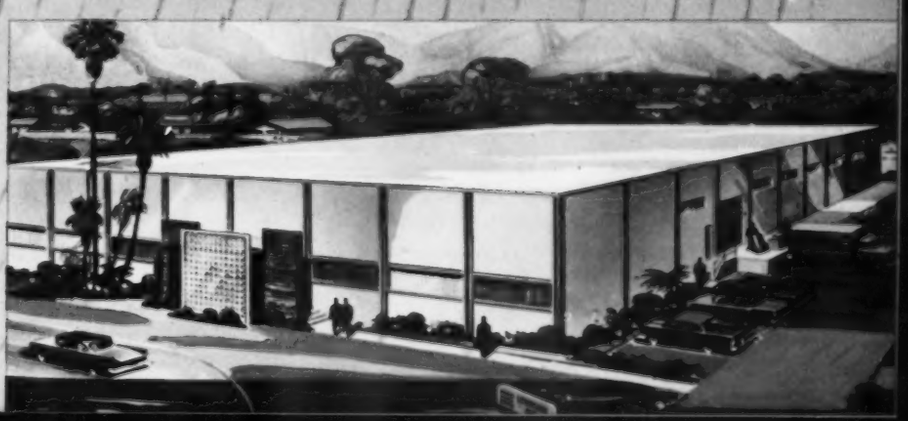
HARRIS-INTERTYPE CORPORATION

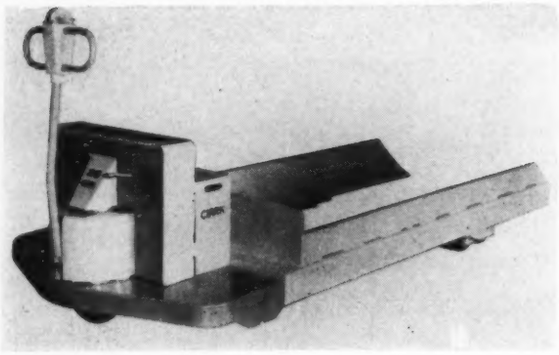
General Offices: 55 Public Square, Cleveland 13, Ohio

Harris Presses • Intertype Typesetting Machines • Cottrell Presses • Seybold Cutters
Macey Collators • Harris Chemicals and Sensitized Plates • Gates Broadcasting Equipment

BEHIND THE WHISKERS is Richard Hoff, Harris-Intertype Director of Personnel Development and Training, entertaining *a few of our girls* at their Christmas gift exchange in a corner of our reception room.

LITHOPLATE INC., Covina, California, doubled its manufacturing area with this new 35,000-square-foot plant. This fine new building also provides excellent additional facilities for research and development on presensitized plates and litho chemicals.





The Powrworker paper roll pallet truck, introduced by Industrial Truck Div. of Clark Equipment Co., handles paper rolls up to 96 in. long and 60 in. in diam. The unit is battery-powered and is available in lengths from 96 in. to 60 in. for shorter rolls.

BATTERY-POWERED WALKIE TRUCK FOR HANDLING ROLLS OF PAPER

A battery-powered walkie truck for handling paper rolls has been introduced by the Industrial Truck Div. of Clark Equipment Co. Rolls up to 96 in. long and 60 in diam. and weights up to 8000 lbs. can be carried by the truck. Known as the Powrworker paper roll pallet truck, the truck carries rolls horizontally on two 16 in. wide contoured forks, which raise 4 in. to provide clearance over rough floors. The steering handle turns 90 deg. in each direction. Brakes are applied automatically when the handle is in a vertical or horizontal position; the handle returns to a vertical position when released. The unit will travel 1.9 m.p.h. when loaded and weighs approx. 1800 lbs. Circle No. 272 on Reader Service Card.

OFF-PRESS RUBBER PLATE PROOFER

An improved version of its extended range off-press proofer machine for setting up and proofing large repeat rubber plate jobs is offered by Mosstype Corporation. The machine is designed for printing repeats over 36 in. and can be supplied to accommodate plate cylinders up to 100 in. face width and 72 in. repeat, states the manufacturer.

As an optional piece of equipment the company will supply a movable inboard bearing which will adapt the machine to presses of different widths. The Series M-5 Proofer can be used with shaftless cylinders, D-mounts, or integral plate cylinders.

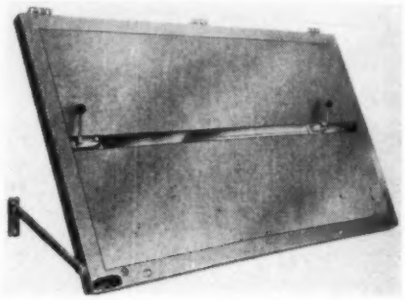
Plate cylinders to be prepared for printing are placed individually on the machine. Positioning is accomplished with the aid of a sliding plate holder, a straightedge, and a dividing head. Progressive proofing in color is facilitated by a foot pedal controlled impression cylinder at the rear of the machine. Circle No. 273 on Reader Service Card.

PRESENSITIZED OFFSET PLATES

Polychrome Corporation has announced the availability of the Speedkote presensitized offset plate. Made of an aluminum manganese alloy, Speedkote provides two printing surfaces with a chemically grained effect, said to assure an easy ink-water balance on the press. Processing the plate is done with a one step chemical called Quick Step developing lacquer. The plate is made ready for the press by wiping its surface with the lacquer after the plate has been exposed in the vacuum printing frame. Circle No. 266 on Reader Card.

OFFSET PLATE REGISTER DEVICE

Bar-Plate Manufacturing Co. has introduced an offset plate register device designed for use on single color short run jobs as well as multicolor work. According to sponsor, the unit is used for controlling register from the flat through the printing press. The standard unit (pictured) involves a stationary single punch and a moveable dovetail oval punch said to control goldenrods in the center from maximum to minimum sizes. It was designed specifically for use on web offset



jobs, but can also be used for sheetfed offset presses.

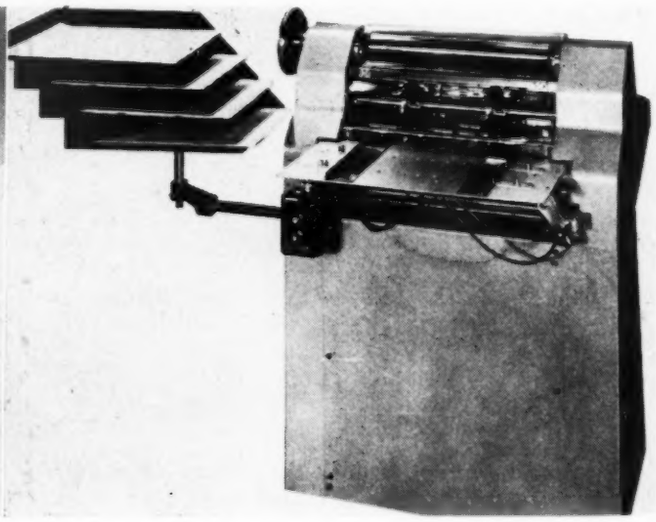
A feature of the device is said to be its adaptability to the bending jib on web offset presses so control is assured on the presses. Accuracy is reported to be ±0.001 in. Circle No. 274 on Reader Service Card.

NUMBERING, PERFORATING, IMPRINTING DONE ON SAME MACHINE

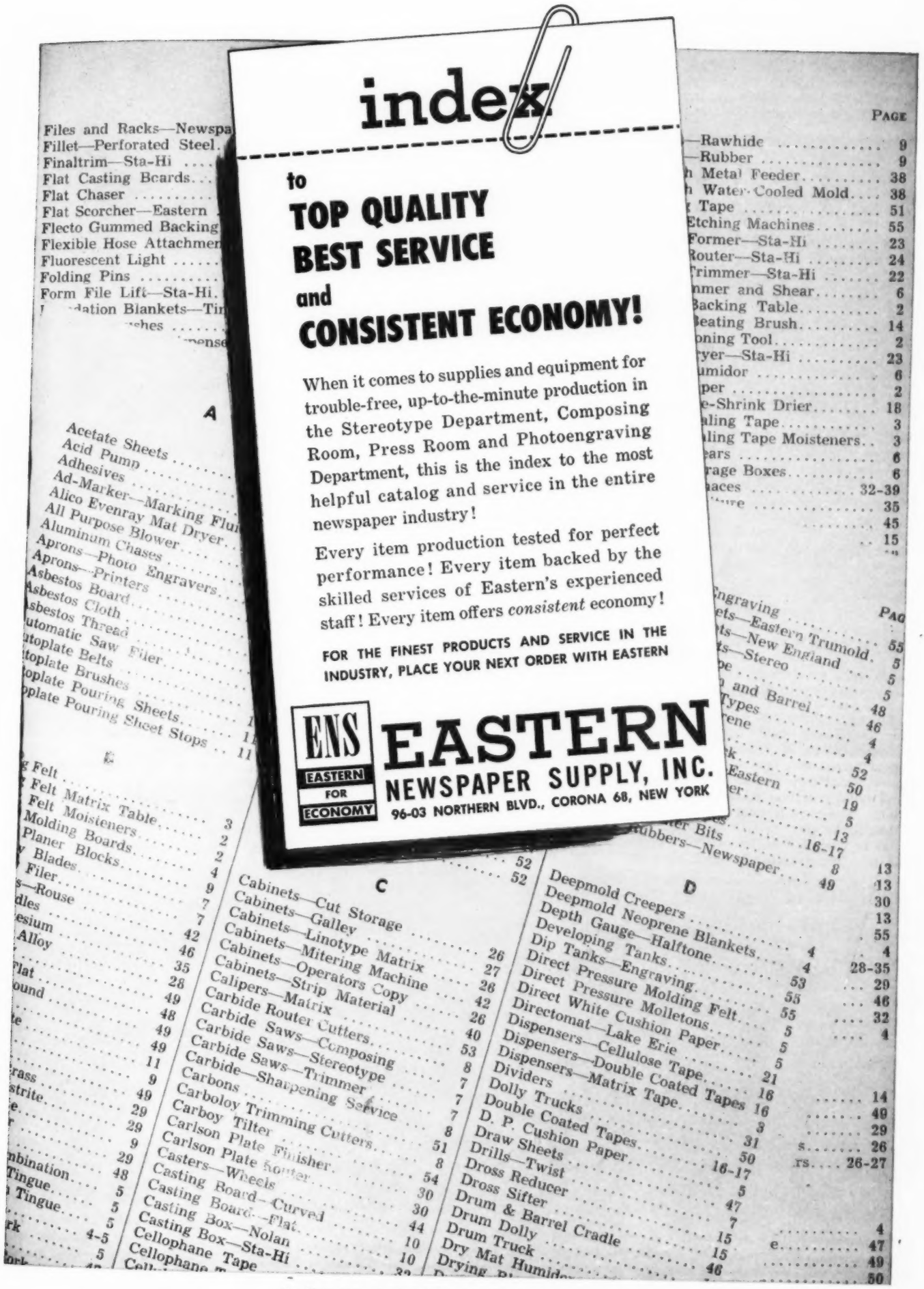
The British-made W-J numbering machine is being marketed by American Wood Type Mfg. Co. The machine permits sheets to be collated, numbered, perforated and imprinted at the same time. The handfed unit is rated at a speed of 3000 per hr. and will accept a maximum sheet size of 18 in. by 14 in. Floor space is 4 ft., 11 in. by 4 ft., 3 in.

Impression is said to be automatically adjusted for various thicknesses of stock. Out of register sheets will not be accepted by the machine and will cause the impression to be thrown off and numbering operations to cease. Numbering machines may be adjusted for duplicate and triplicate relationships. Perforating and imprinting with rubber plates may also be done on this machine. Circle No. 275 on Reader Service Card.

The improved Series M-5 Mounter-Proofer for rubber plate proofing, announced by Mosstype Corporation. When fitted with a dummy cylinder, it can be used for mounting plates on flexible carrier or draw sheets.



The W-J numbering machine allows run-through perforating as well as simultaneous imprinting of small areas with rubber plates. The machine is manufactured in England, is marketed by the American Wood Type Mfg. Co.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nuARC FLIP-TOP PLATEMAKER MADE AVAILABLE IN 43 BY 53 IN. SIZE

A 43 in. by 53 in. platemaker has been added to the Flip-Top vacuum printing frame line of nuArc Company, Inc. The FT-52 is said to operate the same, basi-

cally, as the other flip-top units. The glass is lifted and the negative and plate are positioned on the vacuum frame; the glass frame is lowered and locked; the frame is flipped over so the plate and negative face the carbon arc lamp, which is built into the base; then the automatic timer is set. The timer is said to eliminate all manual settings and adjustments. Once the timer is set for the desired exposure, the arc strikes itself and burns until the time interval elapses, according to the manufacturer. Circle No. 269 on Reader Service Card.

ANNOUNCE FOUR COLOR, STACK TYPE FLEXOGRAPHIC PRINTING PRESSES

Faustel, Incorporated, has announced the manufacture of stack type, four color flexographic presses. The units are high speed presses that feature unclosed fountains, variable speed control of ink rolls, and running register control in all directions. The press features a 42 in. drying distance between colors, and the units may be used in a variety of widths up to 42 in. The presses offer two, three or four printing units on a four color frame. Circle No. 260 on Reader Service Card.

13 x 18" ROLL LEAF STAMPING PRESS RATED AT SPEEDS UP TO 4000 I.P.H.

A new model 13 in. by 18 in. roll leaf stamping press (at right) is offered by Heidelberg. The roll leaf feeder is designed as an integral part of the press. The manufacturer claims that speeds of 1500 i.p.h. to 4000 i.p.h. can be obtained with this unit.

Four rolls, each up to 4½ in. wide, can be fed simultaneously, permitting the use of multiple dies and different colored rolls. The Brighten OH feeder is equipped with four draw rollers, three of which can be adjusted from 0-13 draw and can be operated at varying speeds. The fourth roll can have the same draw as any one of the other three.

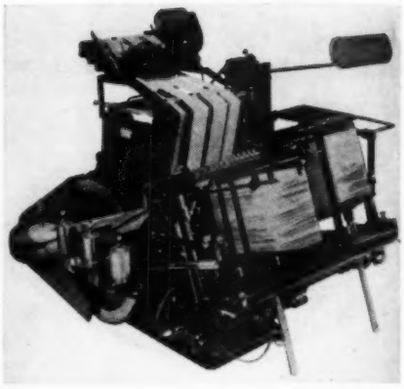
Quality is controlled at high speeds through an extra long impression dwell. The temperature of the heating plate is governed by a mercury type thermostat and for repeat jobs, the thermostat is simply reset. The heating plate, built into the chase, is drilled and tapped on 1 in. centers. Dies are mounted by bunter posts or screws.

With the feeder disconnected, the press is similar to the 13 in. by 18 in. Heidelberg Platen Cutter and Creaser and can be used for embossing, creasing and perforating.

Specifications include an impressional strength of 60 T., a maximum sheet size of 13⅜ in. by 18⅛ in., and a stock range up to 10 ply cardboard. Circle No. 268 on Reader Service Card.

ADHESIVE AND APPLICATOR HAS USE IN PAPER CONVERTING PLANTS

The United Shoe Machinery Corp. has released information on its Thermogrip hot melt adhesive and applicator. The equipment is for use on paper converting equipment in connection with the bonding of continuously moving materials. It is designed for operations in the business forms, book printing and catalog industries, and in other web printing and re-



lated processes with adhesive requirements.

Among the materials to which the machine is claimed to apply the adhesive effectively are metallic foils, polyethylene film, coatings and laminations. The applicator is said to be capable of applying up to ½ lb. of adhesive per min. depending upon the formulation used. Circle No. 265 on Reader Service Card.

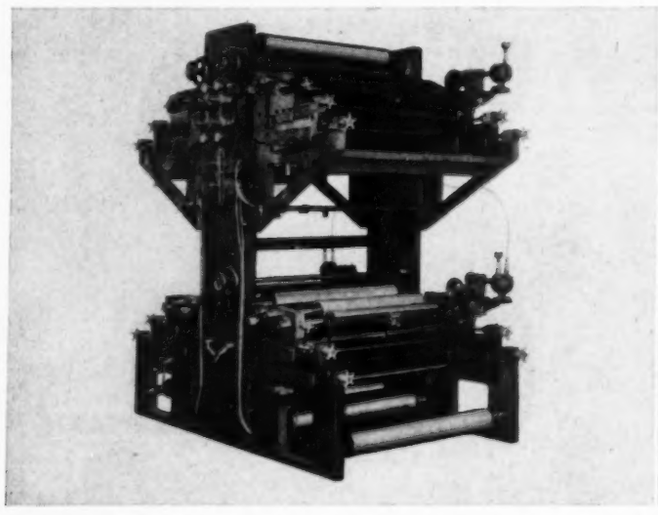
DEVELOPS NEW ENGRAVERS' RESIST

The Philip Lochman Co. announces development of Phico Red Dot Resist for use by photoengravers. The resist is claimed to be stabilized. It is also claimed that visual development in water adds to ease in processing. Circle No. 252 on Reader Service Card.

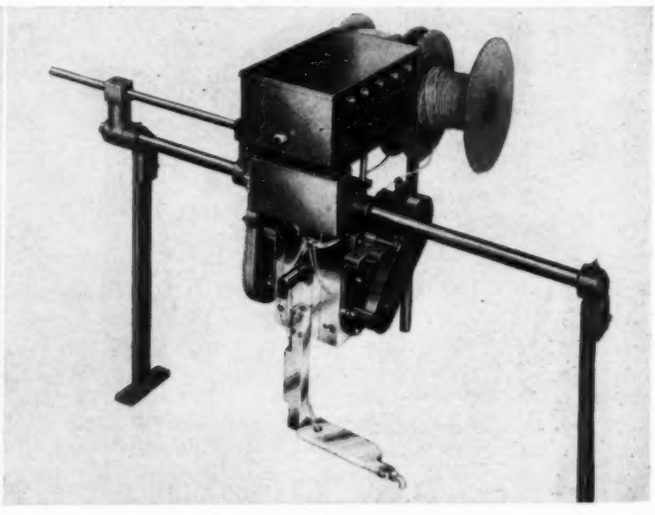
MULTICOLOR ROTOGRAVURE PRESS PRINTS UP TO 1000 F.P.M.

Web printing speeds ranging upwardly to and including 1000 f.p.m. on the Simplar multicolor rotogravure press are claimed by Frank W. Egan & Co. This statement was made in conjunction with announcement of the press which may be obtained with as many as eight color printing units. Press web widths range upwardly to 60 in. The press will handle up to 30 pt. cardboard.

It is not possible in the space available to discuss all features mentioned by the manufacturer. The press, however, is reported to be a distillation of many field



The manufacture of a stack type, four color flexographic press has been announced by Faustel, Incorporated. The unit is a high speed press with two, three, or four printing units on a four color frame. There is a 42 in. drying distance between colors.



Shown is the Thermogrip adhesive applicator which is claimed by United Shoe Machinery Corp. to apply 1300 ft. of adhesive per min. The adhesive is furnished in the form of a cord which feeds into the machine from two reels.

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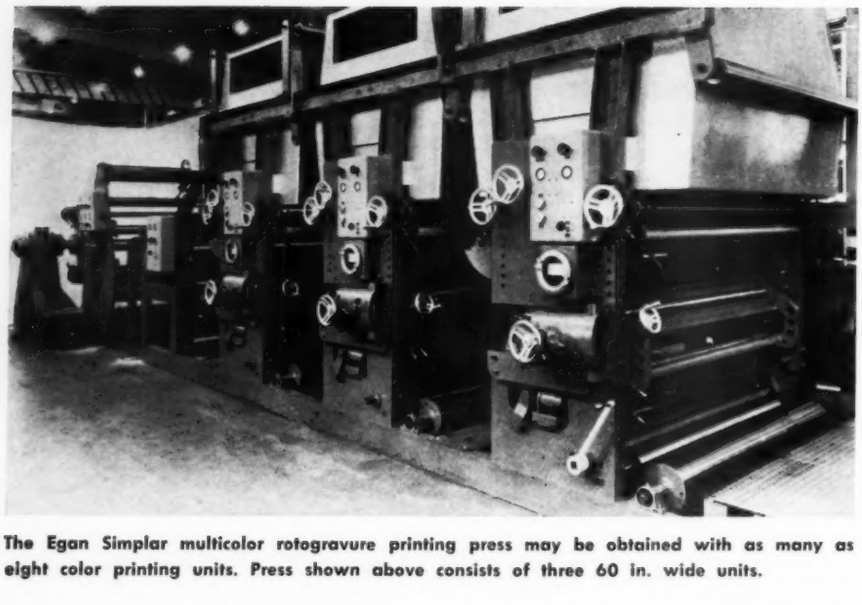

The Egan Simplar multicolor rotogravure printing press may be obtained with as many as eight color printing units. Press shown above consists of three 60 in. wide units.

tested innovations with advanced engineering applied to impression, inking, doctoring and cylinder lockup.

Included in the press are Egan's unwind and winder units.

The Egan high velocity drying system has been employed on some of the most difficult problems in the converting field, reports sponsor. In this high velocity, high heat, gas fired drying system a unit control is utilized for each printing station. The tubular design, encased in insulated chambers, includes uniformly spaced slotted nozzles which impinge air directly on the moving web.

The impression roll remains in fixed position during printing and non-printing periods. The web is held against the impression roll and is not permitted to slacken between the infeed, printing units or outfeed station. The air-controlled opening and closing device lowers and raises supports for the cylinder, doctor knife housing and upper ink reservoir into and out of printing contact, thereby maintaining constant web tension and automatic restoration of uniform impression without adjustment.

The lateral movement register means provides 1¼ in. movement of the cylinder for across-the-web register individually on each unit. The running circumferential register at all press speeds is controlled at individual units. All units can also be adjusted from the web viewing position at the delivery end of the press electrically or by means of manually controlled telescoping tubes. An oblique register device is provided with an eccentric control to make oblique adjustments (in case it is necessary) to a cylinder to conform to any reasonable degree of bias laydown. The oblique control permits infinitely variable adjustment ±0.020 in. on horizontal plane.

In the last unit of the multiple station press a register locating device is utilized to indicate to the pressman the relationships existing between all of the printing cylinders, and, partially the printed web, when the press is stopped. Regardless of the length of stoppage in production, this device allows reclosing of the unit or units in only one position, thus re-establishing the true relationship between elements on the cylinder and web to make it possible to continue printing operations substantially without web wastage. Sponsor further states there is no loss of uniform spacing in the position of the electric eye targets during rewinding.

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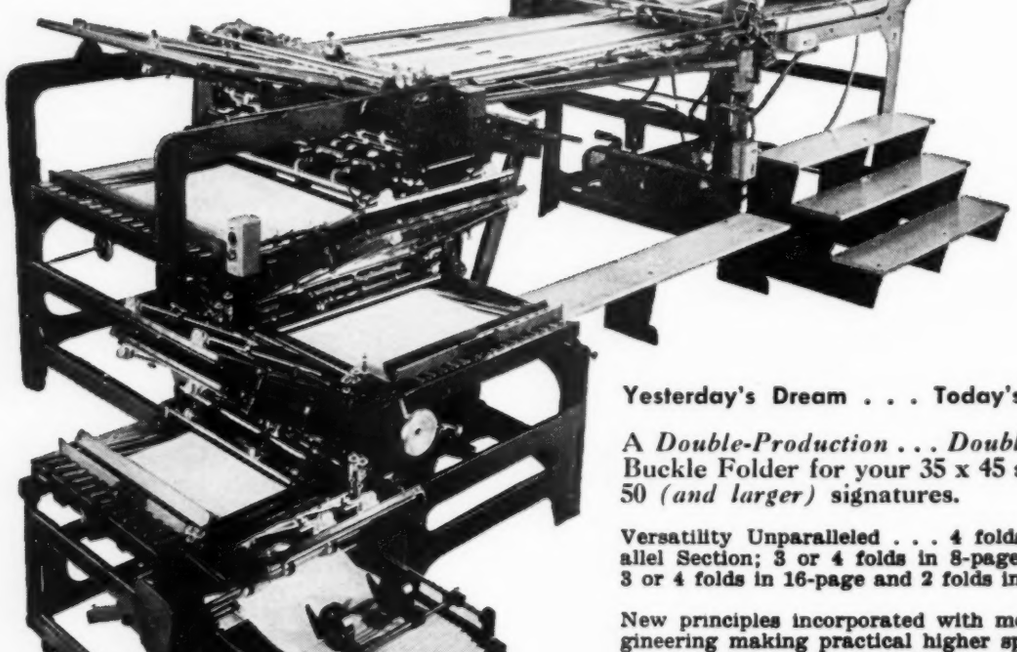

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PRINTING INDUSTRY PATENTS

Covering patents issued Oct. 6, 13, 20, and 27.

All new patents for the printing industry are reported exclusively for PRINTING PRODUCTION by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. PRINTING PRODUCTION is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Composing Room:

TTS CONTROLLED MIXER

This invention is an improvement on the typographical composing machine of the general organization represented in U. S. patent No. 436,532. It provides automatic control units whereby the shifting mechanism of a typographical mixing machine may be operated in response to a code perforated tape. It may be applied to present automatically operated typographical machines with only slight modification. No. 2,908,380 by Paul Hilpman and William A. Milanese, jr., assignors to Mergenthaler Linotype Co.

TYPE COMPOSING APPARATUS

The apparatus is of the type which transmits composing information to a memory device, such information including the identities and different widths of the composing characters and other information to indicate the spaces necessary for tabulation. The arrangement permits justification computations to proceed a column at a time rather than a line at a time. No. 2,910,163 by Ellis P. Hanson, Rene A. Higonnet, Louis M. Moyroud, and Abraham Manevitz, assignors to Graphic Arts Research Foundation, Inc.

Platemaking:

SELF-CONTAINED DARKROOM

This self-contained darkroom is portable and is employed to develop photocomposition film or photographic paper from a linecomposing machine. The device allows the photographic linecomposing operator to check his work and to produce the printing negative at the site of the machine after the film has been exposed. No. 2,909,979 by Edward L. Corrons.

RESIST FOR COLOR PLATES

The process of this patent is an improvement on that described in patent No. 2,628,903. The process has been found to produce resists of exceptionally good quality and especially of subject matter to be reproduced in colors. The ink pockets produced by the operation are exceptionally uniform in corresponding tones, that is, although the ink pockets vary in size and in depth for different tones or intensities, the size and depth of the pockets is very uniform for any given tone or intensity. Thus, the color work produced with such plates compares favorably with that produced by the most carefully controlled and regulated processes and yet the plates are produced with almost a routine exposure and etching of a printing surface. No. 2,907,657 by Hermann Kott, assignor to Publication Corp.

LIGHT-SENSITIVE COATING FOR PHOTOMECHANICAL REPRODUCTION

Patent claims a process for forming plates for use in photomechanical reproduction. The process comprises the steps of coating a base with a light sensitive layer containing the condensation product of 6-nitro-indazole and naphthoquinone-(1,2)-diazide-(2)-4-sulfochloride, exposing the light sensitive layer to light under a pattern to decompose the compound in the light struck areas and treating the exposed layer with a dilute alkaline solution to remove the decomposed com-

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pound. No. 2,907,655 by Maximilian Paul Schmidt and Oskar Sus.

MULTICOLOR NEGATIVE REGISTER

The registry and simultaneous printing of a considerable number of colored images, spaced irregularly in a lithographic plate layout, can be efficiently accomplished by this device. This is achieved by means of a stripping table which provides for positioning a series of negatives or positives for a given color upon a backing sheet where they can be locked in correct registry and photographed. No. 2,902,770 by Raymond W. Mulcahy, assignor to Harris-Intertype Corp.

LITHOGRAPHIC PLATES

The plates are prepared by sensitizing the image areas of a low carbon non-stainless steel lithographic plate having image areas and non-image areas, the non-image areas of the plate containing an overlying coating of dull hydrophilic ink repellent chromium. The image area of the plate is recessed relative to the chromium coating. The method provides for applying to the steel image areas of the plate a solution of ammonium chloride, ferric chloride, cupric chloride and bismuth chloride. No. 2,907,273 by Charles F. Geese, assignor to Chrome Steel Plate Corp.

CHROMED STEEL OFFSET PLATE

The invention is based on the discovery that a plate having excellent lithographic printing characteristics and good durability may be formed of ordinary steel plated with chromium, the chrome surfaces being in an ink repellent but water receptive condition and the image or printing surfaces being formed in clean steel significantly free of oxide or complex films. It is possible to make extremely large numbers of printing impressions before the plate is appreciably worn. No. 2,907,656 by Charles F. Geese, assignor to Chrome Steel Plate Corp.

PATENT SEARCHES

For Patent Research in the U.S. Patent Office, or prompt estimate on any type of search, write

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PHOTO PROCESS USING LIGHT-SENSITIVE QUATERNARY SALTS

The invention is based on the discovery that polymeric quaternary ammonium salts obtained by the reaction of polyvinyl sulfonates, such as polyvinylbenzene sulfonate, polyvinyltoluene sulfonate and polyvinylmethyl sulfonate with pyridine and pyridine derivatives possess good light sensitivity and relief images prepared therefrom can be readily dyed to provide colored reproductions of subjects or to provide relief images which may be used as resist images in various processes of the photomechanical art. No. 2,908,667 by Jack L. R. Williams, assignor to Eastman Kodak Company.

PLATE MOUNTING DEVICE

For securing a printing plate, such as a halftone or an electrotype, to a metal base, this mounting device is in the form of a press in which pressure can be applied uniformly along a relatively wide area independently of the size and the location of the articles being bonded. A self-locking feature also included guarantees that only a predetermined pressure will be applied to the articles so as to assure high uniformity of the bonding process. No. 2,908,319 by Garret D. Robar, assignor to Vandercook & Sons, Inc.

VESICULAR PRINTS AND PROCESS

Vesicular prints having high printing speed can be formed by preparing a spreadable aqueous solution of a hydrophilic colloid having thoroughly dispersed therein a finely divided solid having an index of refraction similar to that of the colloid together with a stabilized photosensitive diazonium compound, coating it on a support, and drying. The resulting layer has high printing speed when exposed to actinic light through a design. No. 2,908,572 by Andre Schoen, assignor to General Aniline & Film Corp.

MAGNETICALLY IMAGEABLE PLATE

The method of printing as discovered in this patent resides essentially in imparting an invisible magnetic image to a magnetically imageable planographic printing plate, developing the image by coating the same with planographic ink receptive material and printing. A magnetic recording sheet is also claimed in which a non-

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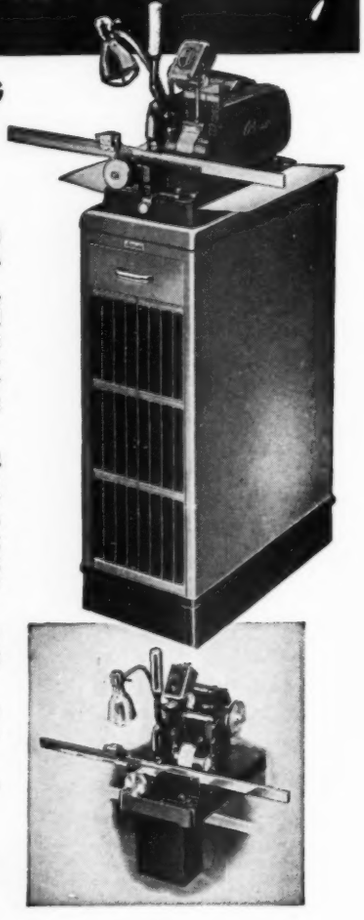

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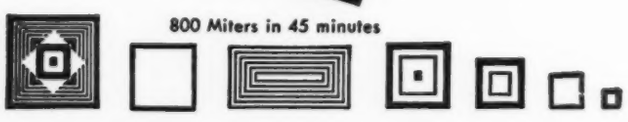

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magnetic flexible base is paper, the ferromagnetic powder is magnetic iron oxide, the light colored pigment is clay and the hydrophilic adhesive is a water-insoluble hydrophilic adhesive. No. 2,909,118 by Frank L. Wellcome, jr., assignor to S. D. Warren Co.

PRODUCING PRINTING PLATES WITH VARIABLE REPRODUCTION SCALE

The scale is applicable to apparatus discussed in patent 2,863,000. It employs a single table to one side of which is fastened a picture to be reproduced and to the other side of which is fastened the plate to be correspondingly engraved. The table executes an oscillating or reciprocating motion, the picture on one side thereof being photoelectrically scanned during the motion of the table in one direction while the plate on the other side of the table is simultaneously engraved in accordance with the picture content. No. 2,909,598 by Ewald Lifferth, assignor to Dr. Ing. Rudolf Hall Hommanditgesellschaft.

BACKING ELECTROTYPES

Electrotype shells for letterpress printing are backed up in a manner whereby temperature gradients in the cast throughout the filling and cooling operations are avoided with the result that perfectly flat plates of more uniform thickness can be obtained. The application for this patent is a continuation in part of that originally filed for patent 2,849,768 on *Method and Apparatus for Backing up Electrotype Shells.* No. 2,909,818 by George W. Bungay, assignor to Electrographic Corp.

MACHINE FOR FINISHING TUBULAR STEREOTYPE PRINTING PLATES

In this method for finishing tubular stereotype printing plates, plate lockup grooves are machined adjacent the straight ends or edges of the plate. With this form of plate, cylinder lockup mechanism like that shown in patent 2,047,364 issued to Foster on July 14, 1935, engages the plate by means of the grooves, the jaws of the mechanism pressing against the side walls of the grooves to place the plate under tension and to press it closely to the cylinder throughout its area. The machining is done with a broaching tool which is power driven. No. 2,909,829 by Louis S. Tyma, jr. and John M. Gvozdjak, assignors to Miehle-Goss-Dexter, Inc.

MAKING OFFSET PLATES WITHOUT CAMERA-DARKROOM

In this method for producing printing plates for offset printing, an original in the form of an image on a translucent or transparent carrier is transferred to a printing plate by making the plate sensitive to light, placing the carrier in contact with light sensitive plate, directing light through the carrier onto the sensitized plate, and subsequently developing the plate to form an offset printing plate. The plate is produced without the use of a camera and darkroom equipment and without the cost of making photographic negatives or positives, and retouching is unnecessary. No. 2,910,358 by Derek Harrison Coleo.

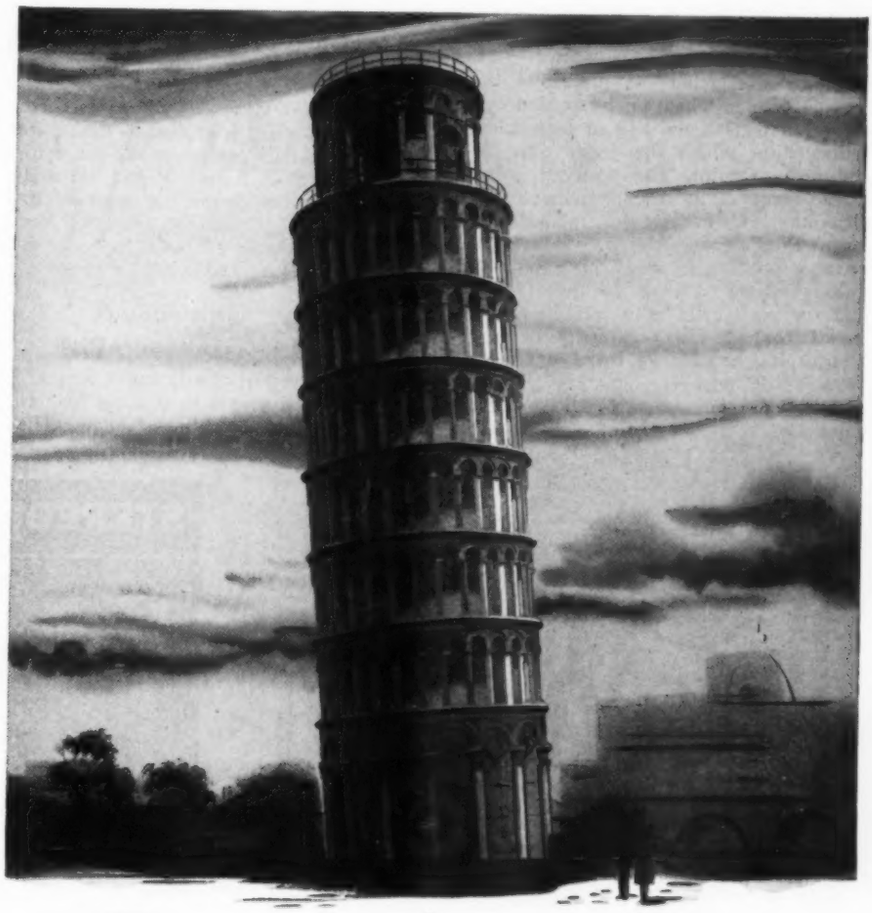
Printing Presses:

APPARATUS FOR REGISTERING PRINTING PLATES

For registering multi-color plates on rotary presses, this apparatus comprises a pair of saddles mounted for radial and axial movement with respect to a rotatable shaft on which they are mounted. The reference plate is secured to one saddle and the plate to be registered therewith to the other. The viewer consists of a pair of illuminated scanners, one mounted above each saddle and adapted to transmit a magnified image to a single ground glass viewing screen. Markers are mounted on the frame of the machine adjacent each saddle for scribing horizontal and vertical center line marks on opposed edges of the plate mounted thereon after the plates have been optically registered. No. 2,907,112 by Warren A. Dutton, assignor to Meredith Publishing Co.

MARKING GUIDE

The guide is for use in cylinder printing where it is often necessary to remove a printed sheet from the manila packing sheets on which the printed sheet is laid to make some changes before a final printing. The guide is V-shaped and makes it possible to mark the packing sheets and printed sheet so that it is pos-



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sible to replace the printed sheet on the manila packing sheets in exact relation. No. 2,907,113 by William T. Noyes.

DRIER FOR PRINTED WEBS

This device is designed to dry a printed web of paper as it proceeds through the press after being printed. It includes a housing provided with a heated air inlet chamber and an exhaust air chamber, the inlet chamber having a narrow slit or nozzle for directing heated air from the inlet chamber against the printed surface of the web and the exhaust air chamber being connected with a forced air supply of heated air and a power operated exhauster or suction fan. No. 2,907,119 by Gideon Kane; Sylvena Kane administratrix of said Gideon Kane, deceased.

REGISTERING CYLINDRICAL FORMS

The invention relates to presses of the Cottrell type in which an impression cylinder has therearound one or more plate cylinders on which the plates must be registered to print. The principal object of the invention is the production of an apparatus and method for mounting a layout sheet on a carrier from which the accurate position of every plate may be quickly related to both the layout sheet and the plate cylinder so that the plate may be quickly clamped into place with as little loss of time for shutdown of the press as is possible. No. 2,907,274 by Arthur K. Taylor, assignor to Taylor Machine Co.

"Allow me to interpret downtime."

NON-OFFSET POWDER RETURN

To alleviate clogging the press with powders applied to freshly printed paper, this machine conveys the sheets past a powder container from which a metered amount of powder is applied to the sheet. The sheet is then carried by the conveyor over a container having a grid top and any loose, excess powder is returned to the container through the grid top. No. 2,906,240 by Daniel Gladwell, assignor to The Selwyn Press Ltd.

INKING ROLLER WITH POROUS CORROSION RESISTANT COATING

The rollers are particularly useful to transfer ink from a source, such as an immersion roller, onto a printing plate. The roller is made up of a rigid cylindrical core having a surface coating of a hard, porous, corrosion-resistant, spray-deposited metal bonded to its outer surface. The coating has embossments forming a pattern to improve the ink transmission capabilities of the roller. No. 2,908,068 by Hans Biel and Walter Kugler, assignors to Hans Sickinger.

DRYING PRINTED INK ON PRESS

To avoid excessive drying of printing inks containing a volatile solvent, such as used in conventional rotary printing presses, this invention provides for adding ink solvent to at least one of the ink transfer rollers by rapidly rotating a cylindrical brush in close proximity to but out of contact with the roller during a printing process. The brush picks up a metered amount of the solvent by rotating the bristles of the brush in contact with the surface of a rotating cylinder carrying a film of the solvent. No. 2,908,221 by George R. Brodie, assignor to Fred'k H. Levey Co., Inc.

RECIPROCATING CARRIAGE DRIVE

The drive is for operating the reciprocating type bed of a cylinder printing press. The mechanism for conducting the reciprocating motion in either direction comprises a single type bed drive gear meshing with a rack on the underside of the bed. The gear is alternately driven by oppositely rotating intermediate gears in

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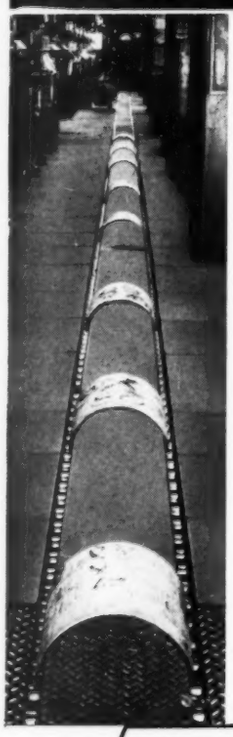

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an adjacent location. The arrangement makes it possible to reciprocate the carriage drive in strokes of differing duration forward and rearward. No. 2,909,070 by Hans-Bernhard Schuenemann and Theo Schwabach, assignors to Schnellpressenfabrik Koenig & Bauer Aktiengesellschaft.

SPIRIT DUPLICATING MACHINE

With this machine, the amount of liquid spirit may be selectively controlled and the quality and number of copies can be improved and increased. This is accomplished by a mechanism which automatically increases the pressure of the impression roller against the drum progressively with each series of revolutions. The machine also includes a novel counter which counts the number of sheets passed through the machine. No. 2,907,272 by Herbert P. Sherman.

ROTARY OFFSET PRESS WITH AUXILIARY OFFSET CYLINDER

The press is of the type in which it is possible to print on opposite sides of a sheet, to superimpose different printing matter on either or both sides of a sheet, to repeat an image from a single form or plate on the same or different sheets, and other varied effects. The superimposition of different printing matter makes it possible to print a composite image by combining different colors, by combining images of relief and offset plates and by combining information of two or more printing plates. No. 2,909,117 by Robert J. Crissy.

SPECIALTY PRINTING PRESS

The press is designed for printing such items as daily calendar pads and dated coupon books, such as Christmas Club savings books, etc. The press has a plurality of changeable printing faces which are automatically changed with each impression or stroke of the press. The selection and grouping of the printing faces is governed by a programming element so that by operating the press in cycles, complete calendar pads or coupon books are delivered with each complete cycle of operation of the press. No. 2,909,992 by John W. Rockefeller, jr., assignor to Columbian Art Works.

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AUTOMATIC FEEDER AND COUNTER

The apparatus automatically feeds individual magazines, books or other articles in sequence, counting the articles and discharging them into a hopper or box adapted to receive them. It arranges them in a stacked relation until a predetermined number has been collected. The counted stacks are then deposited upon a movable conveyor to be moved to the desired destination. No. 2,901,952 by William H. Taylor.

PLATE CLAMPING MECHANISM

Plate clamping mechanism for magazine printing press plate cylinders is designed to grip the plates by means of hooks or clamps engaged in recesses formed on the inner surfaces of the plates. The arrangement includes a cylinder having axial grooves and a plurality of rectangular plate clamping units fitting in the grooves by means of a novel gear assembly which is adaptable to holding plates of almost any dimensions and which is readily interchangeable to provide for changes in those dimensions. No. 2,909,999 by Burton C. Polglase, jr., Emory W. Worthington, and Carl H. Ringe, assignors to R. Hoe & Co., Inc.

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Miscellaneous:

SILK SCREEN PRINT DRIER

This drier for large posters and advertising displays operates more quietly than similar equipment and handles the sheets with less damage to them. The arrangement includes a jet plate positioned within an air path in parallel relation to a moving belt on which the sheets to be dried are carried. The jet plate has numerous jet perforations which are countersunk on the upstream side of the air path. A pneumatic work engaging element is in the form of a tube oriented transversely over the belt. No. 2,907,118 by Albert Maescher, assignor, by mesne assignments, to Cardel Electric Co. Inc.

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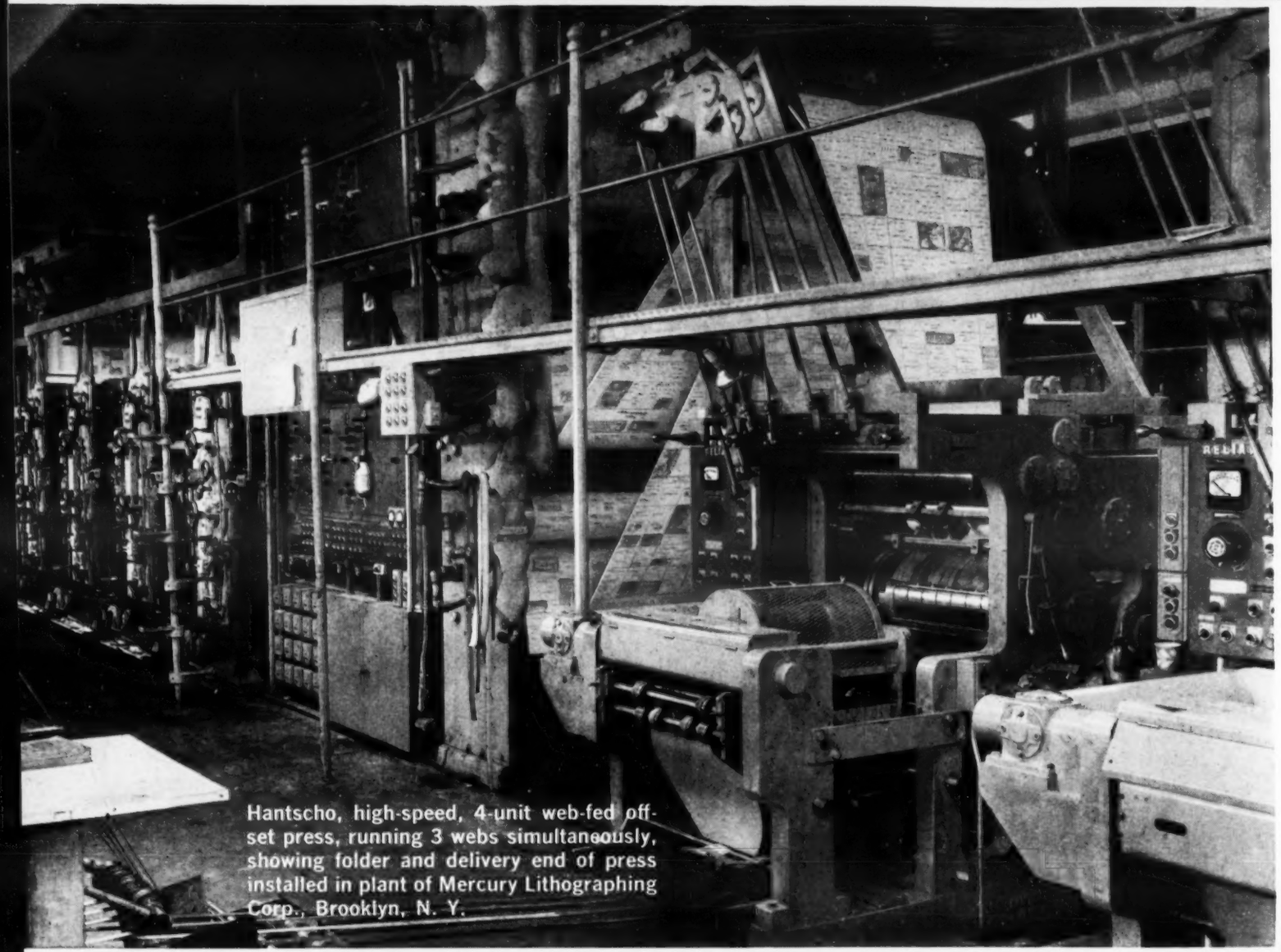

Hantscho, high-speed, 4-unit web-fed offset press, running 3 webs simultaneously, showing folder and delivery end of press installed in plant of Mercury Lithographing Corp., Brooklyn, N. Y.

New, 2-Unit Web Offset Lithographing Press and Folder Will Supplement Present HANTSCHO Installation.

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A steadily increasing business impelled Henry N. Levine, president of Mercury Lithographing Corp., Brooklyn, N. Y., to add a 2-unit press. *They again chose HANTSCHO*, based upon the highly satisfactory performance of their present 4-unit, web-fed offset press and folder installation.

This has been the experience of other leading printers or publishers who use HANTSCHO presses. We invite your inquiries regarding multiple unit, web-fed offset presses.

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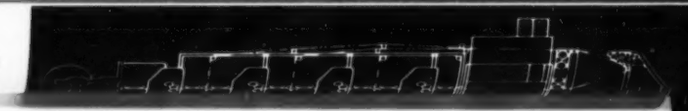

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Global Research

(Continued from Page 44)

in Europe and is gaining use in the United States. These practical developments are the result of a policy permitting theoretical research and are possible only in an atmosphere removed from the pressures of immediate pay-off results.

Other German research activities at Darmstadt where the equipment makers sponsor a research program, and at Leipzig in Eastern Germany, are likewise impressive and effective. Dr. E. Rupp in Leipzig, for example, has devoted considerable effort to the study of printing quality, a project we thought was confined to the highly competitive systems of the West.

Programs in industry supported institutes of France, Italy, Switzerland and Netherlands are each of a scientific nature. The Dutch Institute for Graphic Arts in Amsterdam, under the direction of Dr. J. F. Monroy, operates with industry support, but as part of the Netherlands Technical Organization for Research.

The Dutch scientists have been successful in developing a printability tester which has come next to being a standard test method in the United States. The instrument is simple, and easily operated. The work of staff member Dr. Tollenaar in the fields of moire pattern in halftone printing, and in the science of fluid flow, represents some of the finest technology in the field.

Behind the Iron Curtain

Someone is certain to ask about the activities in the eastern European countries related to printing and Graphic Arts research. The last two international conferences have invited participation from the U.S.S.R. groups and others, but they have not yet been able to participate.

It is known, however, that scientific study in the Graphic Arts is being carried on. Dr. A. Voet, in his review of the status of graphic science and technology in the U.S.S.R. (*Printing Ink Maker,* January 1959), indicates there has not been the organized activity there which is evident in other countries. He also asserts, though, there is no doubt that when government decides the work will be accelerated, there is likely to be a substantially improved condition in the Russian printing industry.

From this review, it should be clear that even though governments participate to a degree in the work of European printing research institutes, their functions are primarily those of encouragement and grant-in-aid to industries which will help themselves. It seems clear that in the United States printing industry, where there are so many small companies, something similar to European Graphic Arts research organizations may well be the answer. Certainly, the smaller printing company cannot support a reasonable program, while the larger units have not yet become industry-minded to the extent that they will support fundamental study and make it available to others.

The European researcher in Graphic Arts seems to be engaged in the same sort of activities his forefathers supported—fundamental

(*Continued on Page* 81)

Leaders Cited for Educational Efforts

Augustus E. Giegengack, former Public Printer of the United States and general manager of the four Educational Graphic Arts Expositions, was awarded the Outstanding Service award at the second annual awards banquet of the Education Council of the Graphic Arts Industry. The banquet, held Dec. 5, was attended by over 200 prominent Graphic Arts people and was held to honor printers for service in Graphic Arts education.

Speaker for the banquet was Dr. Frank W. Hubbard, assistant executive secretary, Natl. Education Assoc. of the United States. L. C. Shomo, National Publishing Co., Washington, D. C., past president of the Education Council, gave the welcoming address.

The James J. Rudisill awards to local Graphic Arts industry associations for developing effective industry education programs in their communities were presented by John Cousler, president, Rudisill and Company, Lancaster, Pa. The Graphic Arts Assoc. of Wisconsin received the Outstanding Achievement award. Rudisill awards were also presented to Graphic Arts Institute of New England and Graphic Arts Assoc. of Cincinnati.

Augustus E. Giegengack (left) receives the Outstanding Service award of the Education Council of the Graphic Arts Industry. The award is presented by Leslie C. Shomo, National Publishing Co., Washington, D. C., past president of the Council.

A newly established group of awards, the Elmer G. Voigt awards, were presented to selected members of 14 national Graphic Arts trade associations. Richard Small, vice president of Western Printing and Lithographing Co., and Council president, and Harold Ross, Kable Printing Co., Mt. Morris, Ill., and Council vice president, presented the Voigt awards to the following:

Louis D. Barbieri, American Photoengravers' Assoc.; Peter Becker, jr., Printing Industry of America; Dr. William Braasch, American Newspaper Publishers Assoc. Research Institute; Ralph Cole, Lithographic Technical Foundation; Byron G. Culver, Intl. Craftsmen's Assoc.; George Dively, National Printing Equipment Assoc.; and John Ellison, National Assoc. of Printing Ink Makers.

Also Harry Howard, Book Manufacturers' Institute; Myron F. Lewis, Intl. Printers Supply Salesmen's Guild; L. E. Oswald, Lithographers and Printers National Assoc.; Stanley R. Rinehart, National Assoc. of Photo-Lithographers; Charles Robinson, Intl. Typographic Composition Assoc.; Ferdy J. Tagle, Intl. Graphic Arts Education Assoc.; and Bert Zahn, Screen Process Printing Assoc.

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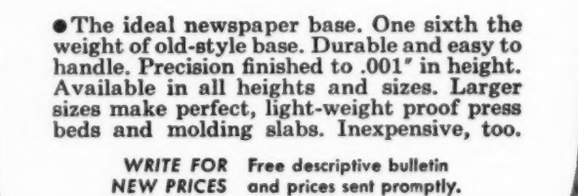

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research which later on will be taken over by United States industrial organizations and converted to "practical" uses. He may eventually tire of this role and insist that he get some support for this much needed work. Before this happens, the Graphic Arts industry in this country should get behind a program of its own.

NEXT MONTH: *Conclusion of this special report on the* Status of Graphic Arts Research. *A general plan will be proposed which the author says is necessary to guarantee the future of the printing industry.*

Packless Stereo Mats

(Continued from Page 36)

plates more accurately in less time and at less cost to permit higher press production.

Composing Room Primer

In the event packless stereotype mats are to be introduced in the plant, particular attention should be given, of course, to the production of as solid type as possible with *reasonable type high tolerance.* Principal objectives in the composing room should be:

(1) Chases in good order; particularly discard those which may be warped or out of square.

(2) Halftone cuts mounted on metal base at proper height as specified by the stereotype department (for instance 0.921 in.). If base is of bridged type metal, discard promptly. In case you use non-distribution system, you'll have no worries. After experience in your plant, you will be able to determine longevity. Keep permanent types of bases clean especially where adhesives are used.

(3) All type matter to be kept within reasonable type high tolerances (±0.001 in.). In some plants, display heads (single column 36 pt. in particular) are cast in a mold producing 0.921 in. high slugs.

(4) Machine maintenance schedule by which machines really can be kept in condition to eliminate casting of air pockets, bubbles or air bells too close to the letter characters. Reasonable molding pressure upon the form is mandatory.

(5) Reset type matter after repetitive use. Molding pressure will reduce the type high relationship. This below typehigh condition varies in severity in different plants.

(6) Don't get the idea that just because the stereotyper uses heavy pressure in molding the form that he can "level everything out" through that pressure. Variables in type high measurement should be held within recommended tolerances.

(7) There seems to be a trend in connection with the use of packless mats that a minimum of 0.040 in. depth in the non-image areas of the form be provided in order to get at least 0.035 in. in the plate.

Molding Pressure Technique

An interesting item regarding proper molding pressure technique with respect to packless mats is mentioned by Frank Stanczak, ANPA Research Institute Laboratories, Easton, Pa. He wrote in *ANPARI Special Report No.* 2: "Proper impression with packless mats is not judged by the fracture of the mat face as is done with the hand packing system, because much less cushion is generally used

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in packless mats than with hand packed mats. The face of a packless mat must be examined for reproduction of reverse dots, bowl depth of character, and mat calendar using a magnifying glass and a micrometer."

Packless Mat Users Report

Recently, PRINTING PRODUCTION surveyed a number of newspaper production men in various size plants as to what they thought of packless mat performance to date. All report good performance. Two have been using packless mats three years; one for two years and others for shorter periods. Three stated they would find it difficult to return to the hand pack mat. In these plants, from two to ten plates per page per edition are cast.

NEEDED FOR BETTER PERFORMANCE—To some extent, the venerable "local conditions" problems seem to enter into individual appraisal of results secured. One executive reported fair results with exception of middletone areas in halftones.

In the questionnaire this question was asked: *What do you feel is needed for better performance?* Four replied they want more depth in open spaces. One was specific in his reply: "Depth of 0.026 in. to 0.030 in. is critical—we need 0.005 in. more depth in the non-printing areas." Most importantly, several replied that more education among the journeymen in processing packless mats in the plant is needed. Two reported that more stability in the mat is needed. Two others asserted that better stereotype equipment and maintenance is required.

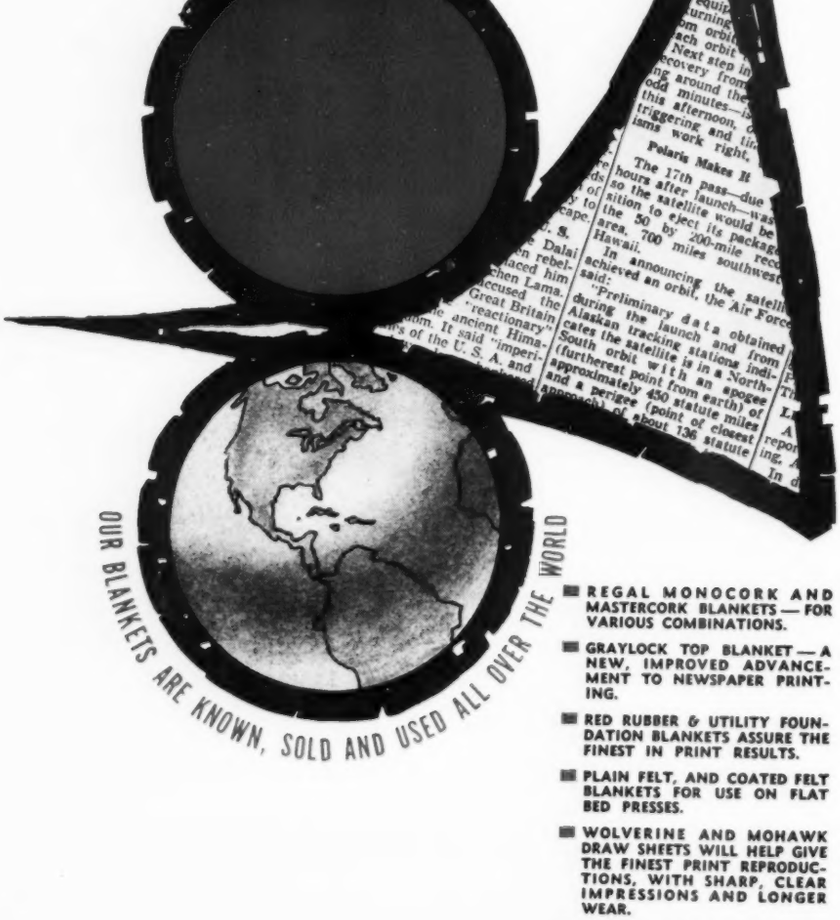
Several stated that precise condition and adjustment of press bearings, form rollers and cylinder blankets is a must. One reported: "The press room superintendent must bear his part in printing a good looking paper from the improved plates."

CLOSE TYPE HIGH TOLERANCES—Most of those replying to our the questionnaire said it was necessary to maintain closely controlled plus or minus type high tolerances of the form elements. Average opinion is that type matter tolerance should be 0.918 $\pm$0.001 in.; column rule 0.916 in., and halftones +0.003 in. with respect to type high.

NON-PRINTING AREA DEPTH—In almost general agreement, those replying to our inquiry about packless mats feel that a depth of 0.035 in. in the non-printing areas constitutes a reasonable demand. Mat manufacturers are striving to improve their products to accomplish this objective consistently in daily newspaper production.

Regarding average depth in non-printing areas of plates, all but one of those queried are getting at least 0.025 in. or more. One reports he is obtaining from 0.020 in. to 0.022 in. From 0.035 in. to 0.040 in. depth is being obtained in one stereotype department, while a lone executive reports non-printing area depths of 0.040 in. to 0.045 in.

PLATE PRINTING SURFACE TOLERANCE—We asked the production men to whom we sent the questionnaires what over-all tolerance is permitted in the printing surface of the plate. Replies from nine indicate that an average of 0.002 in. is being maintained while



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one replied that a level in the printing surface of ±0.0015 is secured regularly.

Properties of the mat molding technique with varying form element heights as outlined above are such that the plates cast from a mat molded from such a form consistently have a printing surface which is held in many plants to ±0.002 in. This collective report by a number of newspaper production men certainly is in terrific contrast to printing surface variations of 0.005 in. to 0.012 in. commonly reported a number of years ago.

MAT FORMING TIME — Our query regarding forming time of packless mats as compared to standard (dry) mats showed that forming time in plants using Sta-Hi equipment averages about 1 min. longer. The difference in forming time among those replying to this question no doubt is due to condition of equipment and is caused by differing percentages of moisture in the mats in different plants in order to obtain required shrinkage. To overcome possible disadvantage of lost time when compared to standard mat forming it is suggested that additional equipment be installed.

POSSIBLE FOUNDRY BOTTLENECK—In addition to the time savings quoted above, one stereotype executive suggested that the bottleneck in hand packing would be transferred to the foundry if plate casting equipment is not of sufficient capacity to meet the faster flow of molded and formed mats.

TIME SAVING WITH PACKLESS MATS—In response to the question regarding time saved through elimination of hand packing, the replies were favorable but varied. No doubt this was due to the size of the daily newspaper operation. One executive stated he estimates that from 3 min. to 6 min. per page is saved through elimination of hand packing. Another said the stereotype bottleneck of bunched pages is eliminated. Other comments were: "Our presses start regardless of bunching forms. We save 75% of hand packing time. We save 420 man hours per week. We have eliminated all overtime."

BENEFITS IN DETAIL — Because of the inclusiveness of his reply to our question regarding production benefits secured through regular use of packless mats, we are quoting the comment made by Al Rosene, production manager, St. Paul (Minn.) *Dispatch* and *Pioneer Press*, as follows:

"The advantages are tremendous. At closing time the bunched forms are picked up quickly by the stereotype department. One of the things we found at the start of the packless mat operation was that additional Sta-Hi equipment must be provided to avoid bottlenecks. We have been able to give the editorial department additional time on late breaking news events. Use of the packless mat has permitted more flexible assignment of workers to other duties, such as routing color plates on day of publication. Also, we can assign more men to the job casting area. This enables us to get job casts out to the composing room earlier, and in turn we can show complete proofs earlier."

TREND TO LESS SHRINKAGE —There isn't any set standard with respect to shrinkage of packless mats for smooth production in the vari-

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ous plants queried by PRINTING PRODUCTION. Reported shrinkages range from ½ in. to 15/16 in. Consensus of opinion, however, seems to be "the least shrinkage the better in using packless mats." Some stereotype departments are shrinking packless mats to mandatory requirements due to size of the printed page. One executive feels best results can be obtained with packless mats up to and including ⅞ in. shrinkage. Beyond that, the processing control is too difficult because smooth, clear reproductions cannot be obtained.

VARIED RESULTS IN ROP COLOR—Mixed results respecting usage of packless mats were reported in response to our query regarding ROP color. Five said they were getting good results. One reported packless mats were used only on spot color. One uses another make of mat for all color. In one plant all color mats are hand packed because of the shrinkage problem. One executive said his paper prints no color.

CONDITIONING PRESSES—We also queried the production men regarding necessary conditioning work on presses when changing to plates cast from packless mats. Four stated that no special conditioning work was done on the presses. Six found it necessary to reset rollers. Two replaced the form rollers which were too soft. In addition to roller replacement, two reported that harder packing was applied to the press impression cylinders.

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For More Information Circle 173 on Reader Service Card

Helpful Literature

(Continued from Page 30)

Bindery, Mailroom

THERMOGRIP ADHESIVE APPLICATORS

A 16 page booklet in which is described both wheel and nozzle type Thermogrip adhesive applicators has been published by United Shoe Machinery Corp. Specifications on applicators, descriptions of various formulations of the adhesive, application data, and suggested uses of Thermogrip adhesives and applicators are included. Circle No. 309 on Reader Service Card.

SHERIDAN BINDERY MACHINES

Literature on its Magnacraft line of bindery machines has been prepared by T. W. & C. B. Sheridan Company. Tipping machines, wrapping machines, and rotary labeling machines are described in detail. Circle No. 338 on Reader Service Card.

Miscellaneous

MAGPLATE PRODUCTS

Folders describing Magplate products have been prepared by Magplate Div., Brooks & Perkins, Inc. Products included in the folder are magnesium newspaper saddles, photoengravers' metal, and backup plates. Circle No. 349 on Reader Service Card.

G-E CONTROL DEVICE CATALOG

A 72 page catalog giving information on its line of control devices has been published by General Electric Co. Included in the illustrated catalog are descriptions of motor starter, static controls devices and relays. Pricing tables, dimensions and application information are also given. Circle No. 318 on Reader Service Card.

QUALITY CONTROL EQUIPMENT

Data sheets listing and describing various instruments, guages and equipment for quality control have been made available by Alico, Incorporated. Among the items included are adaptors, color code cards, depth microscopes, and form height gauges. Circle No. 319 on Reader Service Card.

LITHOGRAPHIC COLOR CHART

A color chart showing all the colors and tones obtainable from the four basic colors (blue, black, yellow, and red) used in process lithography has been prepared by Monadnock Paper Mills, Inc. It is suggested that the chart be used as a reference sheet. Circle No. 321 on Reader Service Card.

TORSTAR MAILING ROOM SYSTEM

Informative literature on the equipment employed in the Torstar mailing room system has been published by Toronto Star Ltd. Among the equipment described are automatic bundlers, bottom wrapper applicators, conveyor systems and sectional mailing tables. Circle No. 328 on Reader Service Card.

JAMPOL HANDLING EQUIPMENT

Information on handling equipment for newspaper plant operations has been prepared by Jampol Company, Inc. Conveyors, track systems, tiering machines, and truck loaders are among the equipment described in the literature. Circle No. 333 on Reader Service Card.

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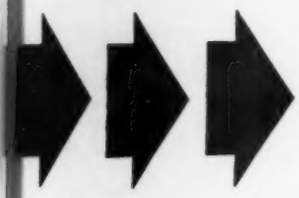

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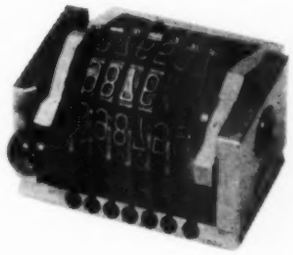

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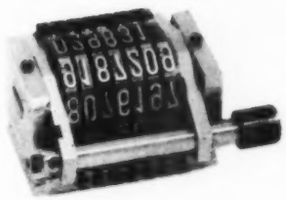

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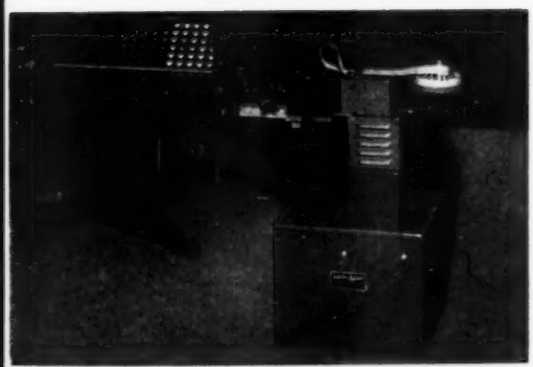

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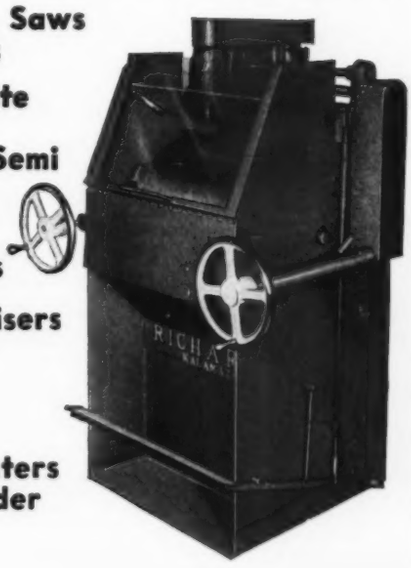

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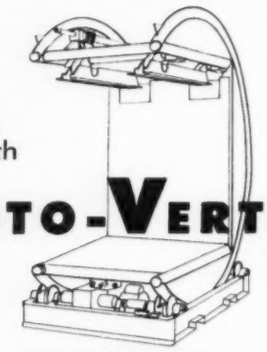

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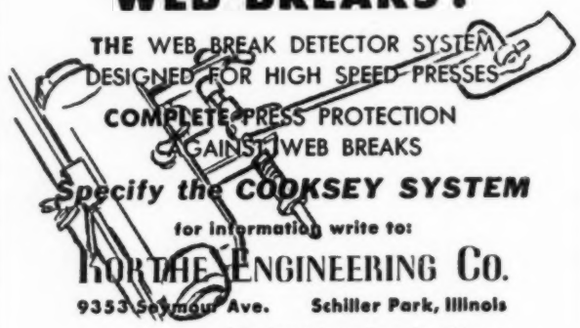

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JANUARY 1960

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MEADE AND COMPANY, 454 Statler Office Bldg., Boston 16, Mass. Phone: LIberty 2-9677.

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FRED FRISENFELDT, 1709 W. 8th St., Los Angeles 17, Calif. Phone: HUbbard 3-2777.

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Printing Industry of America has released the following schedule for 1960 section meetings: Trade Binders Annual Meeting, Chase Hotel, St. Louis, Mar. 25-27; Web Offset Annual Meeting, Chase Hotel, St. Louis, Apr. 20-22; Rotary Business Forms Annual Meeting, Edgewater Beach Hotel, Chicago, Apr. 25-27; Ticket and Coupon Annual Meeting, Arlington Hotel, Hot Springs, Ark., May 4-5; and as was previously announced, the Production Conference, Edgewater Beach Hotel, Chicago, June 16-17.

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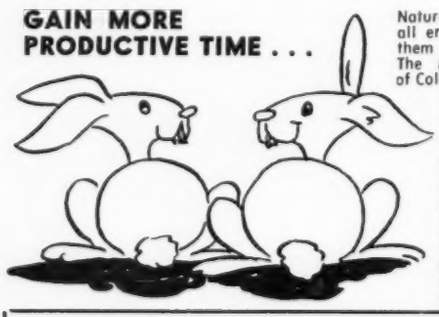

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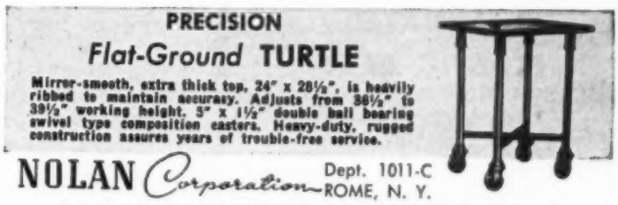
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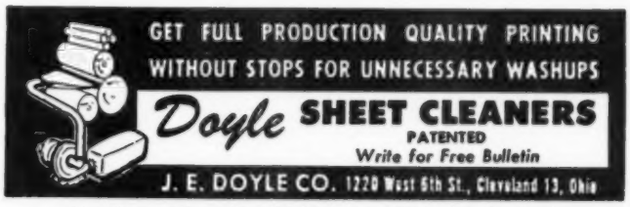
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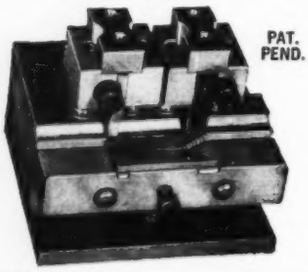

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ANNUAL EDITORIAL INDEX

Every feature story and article which has appeared in Printing Production from Jan. 1959 through Dec. 1959 is listed in this index. Also included are the complete contents of the department entitled Equipment and Supplies. For your convenience, each article is listed under a main heading corresponding to the subject matter of the story. Where an article could be listed under more than one heading, multiple listings have been provided.

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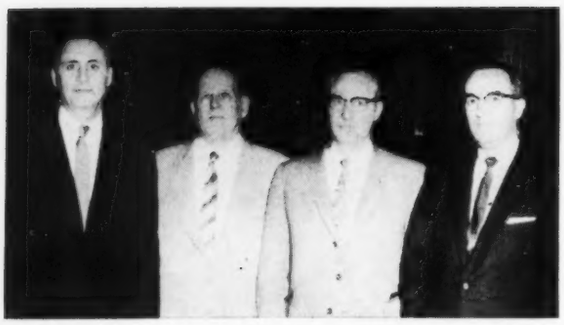
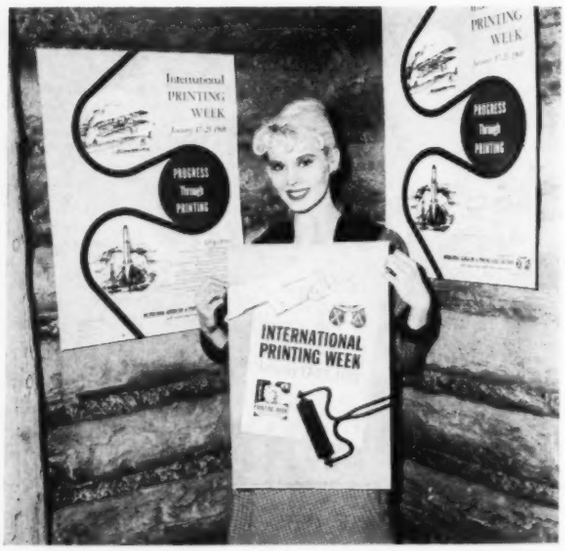


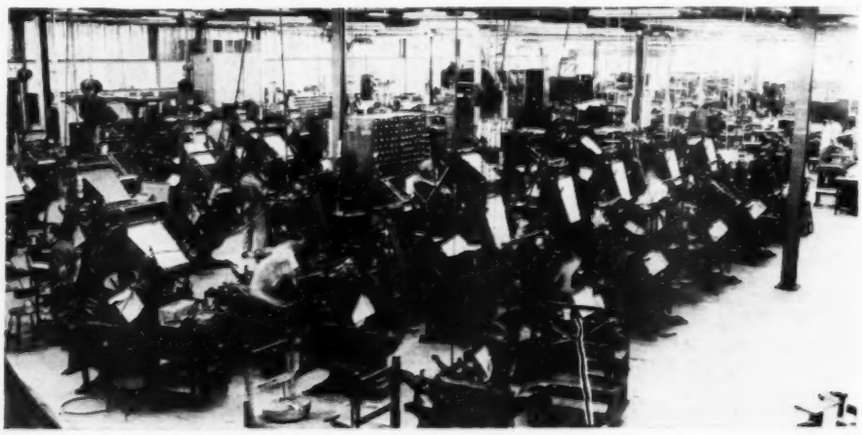
NAPL Re-elects Officers—Stanley R. Rinehart (second from right), E. I. du Pont de Nemours & Co., Wilmington, Del., was re-elected president of Natl. Assoc. of Photo-Lithographers at the 27th annual convention in Kansas City. Among the other officers are (left to right): J. Tom Morgan, jr., Litho-Krome Co., Columbus, Ga., vice president; Walter Soderstrom, executive vice president; and George Carnegie, Consolidated Lithographing Corp., Carle Place, N. Y., secretary.

GRAPHIC VIEWS

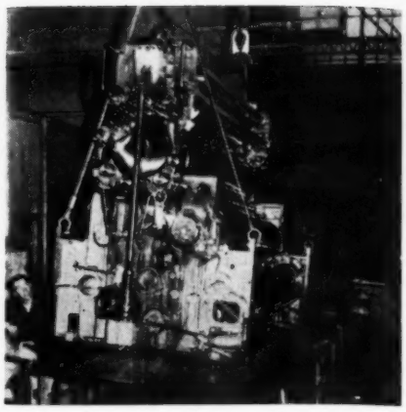
of the Printing Industry



Miss Perfect Type for 1960—Miss Dorothy Provine, Warner Bros. movie starlet, has been chosen Miss Perfect Type to reign over the international observance of Printing Week, Jan. 17-23. The poster held by Miss Perfect Type is the prize winning printed poster announcing Printing Week; in the background are silk screened objective posters to be used for Printing Week displays. Printing Week is an international observance which is sponsored each year by the Intl. Assoc. of Printing House Craftsmen and cooperating organizations.



Busy Linotype Assembly Room—This view in section of Mergenthaler Linotype Co.'s machine assembly room was taken in the company's new plant building, Plainview, Long Island, N. Y. Company is now in first year occupancy of the building, having commenced operations there during September 1959. As commonly understood, an "assembly line" is not utilized. Instead of the machines moving along the line, various teams of workmen progress from one machine to the other. The 250,000 sq. ft. one story building was erected by Luria Engineering Co.



Press With Add-A-Unit Construction—The unit being loaded on the truck is one-fifth of a 54 in. by 77 in. Miehle offset press, which features Miehle Add-A-Unit construction. Shipped with inker and cylinders in place ready to be hooked up with the four other self-contained color units, the press is said to require less time for installation.

Heidelberg Prize Winning Salesmen—Three Heidelberg Eastern, Inc., prize winning salesmen and their wives depart for an all-expenses-paid trip to Europe, which included a three day visit to Heidelberg facilities in West Germany. They are left to right: Mr. and Mrs. William Francis, Mr. and Mrs. Len Goldstein, and Mr. and Mrs. Don Rothenberg.

Press Equipment Around the World—Robert C. Corlett (left), president, Goss Company, Div. Miehle-Goss-Dexter, Inc., discusses the need for modern newspaper press equipment in all parts of the world with Alex McEwan, managing director, Goss Limited, Preston, England. The map shows locations in the world where Goss equipment has been sent.

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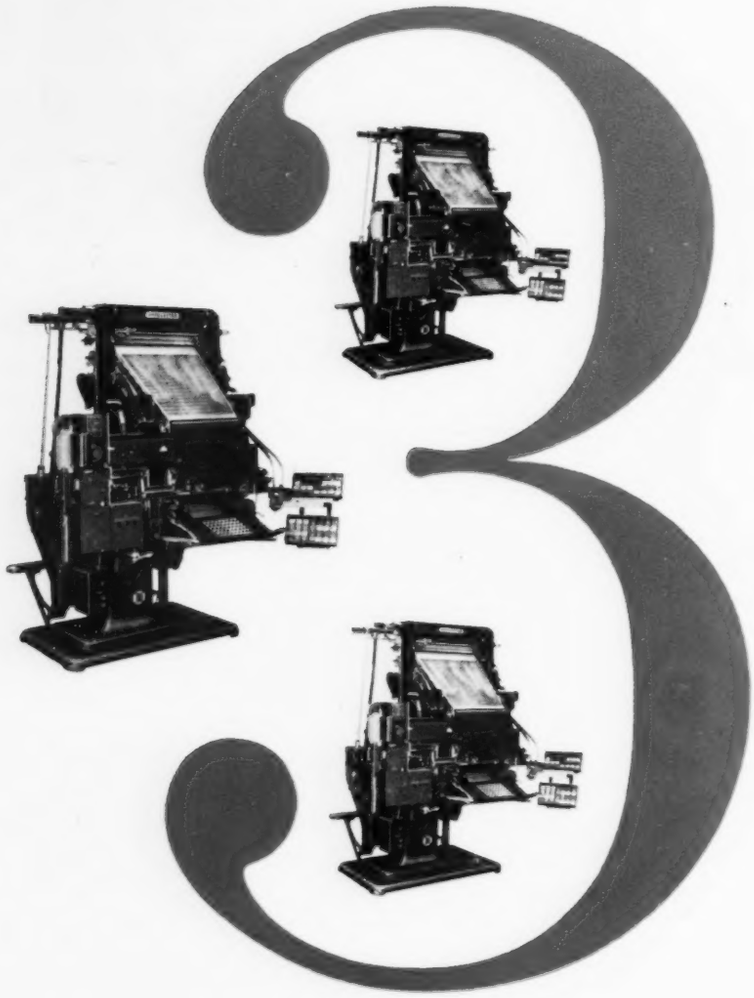

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